

Report to the Governor in Council

*Status of Competition in Canadian
Telecommunications Markets*

*Deployment/Accessibility of
Advanced Telecommunications
Infrastructure and Services*

October 2005

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This publication is available electronically: <http://www.crtc.gc.ca>

This publication can be made available in alternative format upon request.

Ce document est également disponible en français.

Catalogue No. BC92-57/2005E
ISBN # 0-662-41273-7

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télécommunications canadiennes

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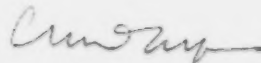
31 October 2005

The Honourable David Emerson, P.C., M.P.
Minister of Industry
235 Queen Street
11th Floor – East Tower
Ottawa, Ontario
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Dear Minister Emerson:

I have the honour to present to you, in accordance with Order in Council
P.C. 2000-1053, the fifth and final report of the Canadian Radio-television
and Telecommunications Commission addressing the Status of Competition
in Canadian Telecommunications Markets and the Deployment and
Accessibility of Advanced Telecommunications Infrastructure and Services.

Sincerely,



Charles M. Dalfen

Canada

Acknowledgements

The Commission wishes to thank all the entities that completed the CRTC Data Collection forms, without which this report would not have been possible. The Commission would also like to acknowledge the assistance provided by Industry Canada in the analysis of broadband deployment as it related to the rural communities in Canada and to Statistics Canada for the various economic data used throughout the report.

Executive Summary

This is the fifth and final report to the Governor in Council with respect to the status of competition in Canadian telecommunications markets and on the deployment and accessibility of advanced telecommunications infrastructure and services. These reports have evolved to become a key component of the Commission's monitoring plan and are used by all stakeholders as an authoritative source of information on the Canadian telecommunications industry. In *Monitoring the Canadian telecommunications industry*, Telecom Public Notice CRTC 2005-15, 18 October 2005, the Commission announced that it would continue with its monitoring activities and the issuance of monitoring reports.

Industry Overview

Over the past five years, there have been extensive changes in the telecommunications industry encompassing the regulatory framework, technological developments, industry consolidation and service and/or market developments. It would have been difficult to imagine five years ago that in 2005 the Commission would be holding a proceeding to, among other things, establish a framework for forbearance from regulation of residential and business local exchange telephone services.

Internet and wireless services continue to be the engines of growth and innovation for the Canadian telecommunications industry. The decline or minimal growth in revenues from local and access, long distance and data and private line services, collectively, is evidence, not necessarily of declining demand for telecommunications services, but rather, an indication of the deployment of more efficient and effective technologies or platforms to deliver the services.

Technology continues to impact the industry, not only by reducing costs, but also by introducing new means of providing telecommunications services which improve the business case of industry participants. In the midst of these developments, Canada continues to have not only a very high telephone penetration rate of 98.8 subscribers per 100 households but also a very high Internet subscription rate of 59 subscribers per 100 households.

Many entities in the telecommunications industry, both incumbents and competitors, have undergone a period of downsizing, restructuring or bankruptcy, and those that have emerged are stronger and more focused. As a result of recent consolidations, by year end 2004, virtually all of the larger incumbent telephone companies had either entered or expanded and solidified their out-of-territory operations by acquiring some of the larger facilities-based competitors.

Cable distribution undertakings have not been idle. These companies are major providers of Internet service. More recently, the larger cable undertakings started to provide local telephone service by utilizing Voice over Internet Protocol (VoIP). Cable distribution undertakings also participated in the consolidation activities in the industry, as one of the larger cable companies acquired a national facilities-based telecommunications service provider.

In the midst of these activities, total telecommunications revenues displayed strong growth in 2004, increasing from \$31.8 billion in 2003 to \$33.3 billion, a 4.7% increase. Wireline revenues, representing 72% of the total industry revenues, increased in 2004 from \$23.8 billion in 2003 to \$23.9 billion, a 0.3% increase. Wireless revenues however, representing 28% of the industry total, continued to display strong growth, increasing from \$8.0 billion in 2003 to \$9.5 billion in 2004 an increase of \$1.5 billion or 18%.

The telecommunications industry's earnings before interest, taxes, depreciation and amortization (EBITDA) increased from \$10.9 billion to \$11.5 billion, a \$0.6 billion or 5% increase. The increase was due to the wireless providers, whose EBITDA increased from \$3.1 billion to \$3.7 billion, a \$0.6 billion or 19.4% increase. The wireline EBITDA remained relatively unchanged at \$7.8 billion. The incumbents' (including their out-of-territory activities) EBITDA increased from \$7.2 billion in 2003 to \$7.7 billion in 2004, a \$0.5 billion or 7% increase. The competitors (other) EBITDA decreased from \$0.6 billion to \$0.1 billion, a \$0.5 billion or a 83% decrease mostly due to the industry consolidation. As a result, the wireline incumbents' share of the industry EBITDA increased from 66% in 2003 to 67% in 2004, while that of the wireless providers increased from 28% to 32% and the wireline competitors' share decreased from 6% in 2003 to 1% in 2004.

The consolidation activities did not have a dampening effect on capital expenditures. Capital expenditures increased from \$5.2 billion in 2003 to \$5.7 billion, a \$0.5 billion or 9.6% increase. Wireline providers increased their capital expenditures from \$3.9 billion in 2003 to \$4.7 billion in 2004, a \$0.8 billion or 21% increase; by contrast, wireless providers reduced capital expenditures from \$1.3 billion in 2003 to \$1.1 billion in 2004, a decrease of \$0.2 billion or 15%.

Long Distance

In the long distance market, revenues continued to decline, decreasing from \$5.9 billion in 2003 to \$5.6 billion in 2004, a \$0.3 billion or 6.0% decline. The number of long distance minutes, however, increased in 2004 by 6.0% when compared to the previous year. The incumbents' share of long distance revenues remained unchanged in 2004 at 67%.

Local and Access

The local wireline market continued to be the largest segment of the telecommunications market, accounting for 29% of the industry's revenues. Local revenues and the number of lines remained unchanged at approximately \$9.7 billion and 20.6 million lines in 2004. Overall, the incumbents' share of local service revenues (excluding contribution) and lines declined from 95% in 2003 to 94% in 2004. Competition in the local and access market was primarily confined to the major centres where competitors had approximately 90% of their lines.

Competitors' share of business local revenues increased from 11% in 2003 to 12% in 2004. In the residential market, their revenue share increased from 2% in 2003 to 3% in 2004. In various larger urban areas, competitors generally had between 0.1% and 23% of local business lines and between 0.1% and 25% of local residential lines.

The competitors remained heavily dependent on the incumbents' local facilities due, in part, to their limited access to external funding and the high cost of building these facilities to support a market share of approximately 7%.

Internet and Broadband Deployment

The Internet market continued to have strong growth and continued to be competitive. The Internet market was again one of the fastest growing markets in the industry. Internet revenues increased from \$3.7 billion in 2003 to \$4.2 billion in 2004, a \$0.5 billion or 12.9% increase. The incumbent telephone companies had 43% of the retail Internet access revenues in 2004, while the competitors (cable) companies had 39% and all others had 18%. The four largest Internet service providers accounted for 59% of the retail Internet revenues in 2004.

Broadband deployment continued to progress, with approximately 89% of Canadian households having access to broadband services, of which 48% actually subscribe. Ninety-eight percent of urban households can access broadband service versus 68% of the rural households. In 2004, 59% of Canadian households had an Internet subscription. There were more high-speed Internet households (43%) than there were households with dial-up subscriptions (16%). Public funding to help seed private sector investment in broadband deployment was also available at both the federal and provincial levels based on a variety of funding models.

Wireless

The wireless market continued to display strong growth and continued to be competitive. Wireless revenues increased from \$8.0 billion in 2003 to \$9.5 billion in 2004, a \$1.5 billion or 17.6% increase. The wireless share of total telecommunications revenues continued to increase, growing from 25% of total industry revenues in 2003 to 29% in 2004. Three major entities accounted for over 90% of the wireless market, with no entity dominating in terms of either revenues or subscribers. After several years of decline, the average monthly revenues per subscriber increased from \$48 in 2002 to \$49 in 2003 and \$52 in 2004.

Data and Private Line

In the data and private line market, total revenues in 2004 decreased from \$4.5 billion in 2003 to \$4.4 billion in 2004, a \$0.1 billion or 1.6% decrease. This decline was the result of private line service revenues that declined by 9.7%, more than offsetting the 6.9% revenue growth displayed by data services.

The competitors', including the competitive (ILEC out-of-territory) service providers', share of the data and private line market, increased from 26% in 2003 to 27% in 2004. Aggressive pricing and reduced demand continued to be major contributors to the decline in private line service revenues. The industry is continuing to benefit from the growth of the newer data services that meet customer requirements for increased speed, functionality and cost efficiency. Service providers promoted these newer data services such as Ethernet and Internet Protocol based Virtual Private Network which had revenue growth of 18% and 68%, respectively, and which may, in part, account for some of the reduced demand for private lines and legacy data services such as X.25.

Consumer Survey

Based on the results of the consumer survey performed by Decima in 2005 on behalf of the Commission, more than half of the households (52%) indicated that they spend more than \$75 a month on telecommunications services. Sixty-four percent of Canadians believe that they have benefited from the availability of competition. Canadians welcome competition, as 42% indicated that they had at some time subscribed to an alternative provider of long distance service.

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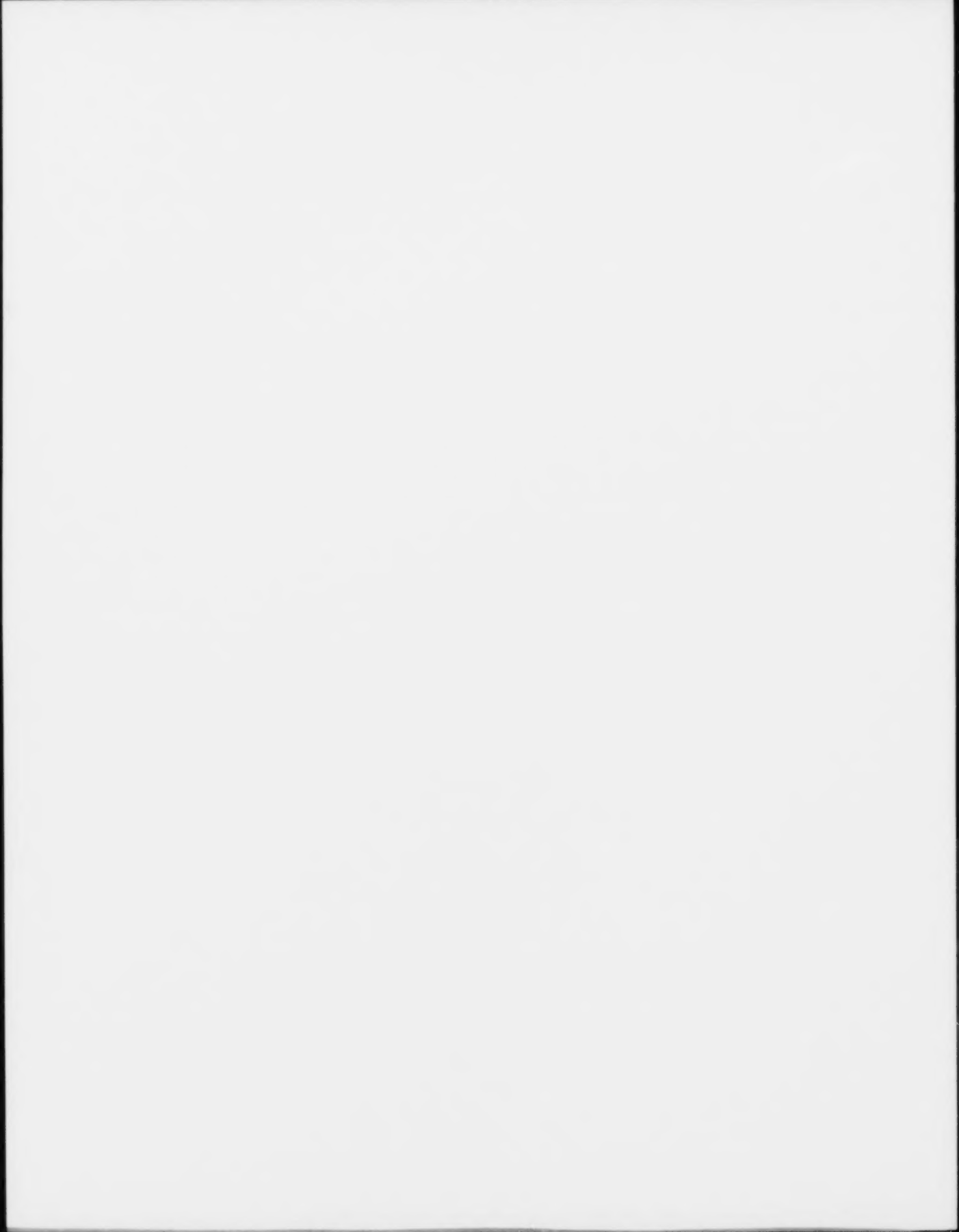
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1.0 Introduction

1.1 Purpose of the Report

This is the fifth and final annual report of the Canadian Radio-television and Telecommunications Commission (Commission) to the Governor in Council on the status of competition in Canadian telecommunications markets and the deployment and accessibility of broadband services and facilities across the country (GIC Monitoring Report).¹

These reports have evolved to become a key component of the Commission's ongoing monitoring plan and an authoritative source of information on the Canadian telecommunications industry for use by all stakeholders. Although this is the Commission's final report to the Governor in Council on the status of competition in Canadian telecommunications markets and the deployment and accessibility of broadband services and facilities, the Commission will continue with its monitoring activities and will continue to produce reports on competition in telecommunications markets. In *Monitoring the Canadian telecommunications industry*, Telecom Public Notice CRTC 2005-15, 18 October 2005, the Commission notified the industry that it found the reports useful in meeting its obligations under the *Telecommunications Act* (the Act) and that it would therefore continue with its monitoring activities and the issuance of monitoring reports.

These reports have been prepared in response to the Governor in Council's June 2000 Direction which:

(a) requires the Commission to submit, once in each year for the next five years, a report to the Governor in Council on the status of competition in Canadian telecommunications markets and on the deployment and accessibility of advanced telecommunications infrastructure and services in urban and rural areas in all regions of Canada,

(b) requires that the report include

(i) an examination of promising means for accelerating private sector investment in rural broadband infrastructure, such as initiatives to aggregate local demand for advanced telecommunications services, and

(ii) relevant data and analyses.²

The information gathered as part of its monitoring activities enables the Commission to determine more effectively (a) the state of competition, (b) the effect of competition on services to consumers and business customers, and (c) service providers' compliance with legal and regulatory requirements.

¹ The previous four reports on the *Status of Competition in Canadian Telecommunications Markets - Deployment/Accessibility of Advanced Telecommunications Infrastructure and Services* were issued in September 2001, December 2002, November 2003, and November 2004.

² Order in Council P.C. 2000-1053, June 26, 2000 issued pursuant to section 14 of the *Telecommunications Act*.

The telecommunications entities covered in this report include not only the companies that are primarily involved in the provision of telecommunications services, but also other companies such as utility companies and broadcast distribution undertakings (e.g., cable companies) that provide telecommunications services such as Internet access or other telecommunications services, either directly or indirectly, through affiliated companies. For the purposes of this report, only telecommunications services and operations are taken into account in the case of cable companies³ as well as other companies whose primary line of business lies outside of telecommunications (e.g., as in the case of utility companies involved in the provision of telecommunications services).

1.2 Data Collection and Outline of the Report

This report is based on the responses to the Commission's data collection forms which have been issued annually since 2001 (referenced as CRTC Data Collection), internal analyses, data collected from other sources, including Statistics Canada, Industry Canada, and company-specific financial reports and information previously filed with the Commission.

In 2004, the Commission implemented a number of administrative changes to the data collection process in order to better coordinate and streamline the activities that it undertakes to monitor and regulate the Canadian telecommunications industry. These activities include information collected for telecommunications entity registration lists, international licences, telecommunications fees and the contribution regime.⁴

In 2004, the Commission introduced a secure web-based platform, the Data Collection System or DCS, for collection of 2003 data which was in keeping with the Canadian Government Online (GOL) initiative. In addition to the administration changes noted above, DCS helps to improve the quality and timeliness of the data collected, and reduces the overall effort required to produce the monitoring report.

In order to increase security of the data submitted online via DCS, the Commission, in 2005, introduced the Government of Canada epass security package, a unique electronic credential that is now used to communicate securely with on-line Government services. All entities that access DCS have been assigned this security package for submission of data.

In 2005, further changes were introduced to streamline the data collection process. In order to reduce the reporting burden on smaller entities, the Commission stratified the industry into two broad groups (Group 1 and Group 2) for data collection purposes. Group 1 includes entities who (i) have significant telecommunications revenues, (ii) file tariffs or (iii) have international licences. Group 2 includes the remaining entities that generally have few revenues.

³ The Commission's annual *Broadcasting Policy Monitoring Report* provides more comprehensive data on broadcasting distribution undertakings as well as radio and television broadcasters, and Internet use in Canada.

⁴ *Telecommunications industry data collection: updating of CRTC registration lists, telecommunications fees, Canadian contribution mechanism fund administration, international licences and monitoring of the Canadian telecommunications industry*, Telecom Circular CRTC 2003-1, 11 December 2003.

The Group 1 entities were required to complete and submit data collection forms that encompassed a range of company-specific information, including financial data (e.g., income statement, balance sheet and capital expenditures) along with detailed telecommunications information focusing on product and geographic market information. Geographic markets are defined on a national, provincial/territorial, regional, city or, for mapping purposes, postal code basis. Group 2 entities were required to complete and submit a simplified form in which only general information was requested. In all cases, the data submitted was as of 31 December 2004.

Certain figures published in prior years' monitoring reports may be restated to be consistent with data displayed in this report. Other figures may change as a result of some companies resubmitting prior years' data. In addition, certain data may be reclassified to better reflect the market segments or industry developments. These restatements are identified by means of a number sign (#).

Most of the tables and figures included in the report are derived from the CRTC Data Collection System while others are derived using Statistics Canada and Industry Canada information. The data, derived from these sources, are not always consistent with each other, given that the universe surveyed, the definitions used and the level of detail requested may be different. The data source is identified for each table and figure contained in the report. Statistics Canada data is generally only used when the data is not available from the CRTC Data Collection System.

The report also includes the results of a consumer survey conducted by Decima Research Inc. for the Commission to assess consumer behaviour towards, and perceptions and awareness of, various telecommunications services. Objectives of the survey included the measurement of consumers' expenditure and choices in telecommunications services, wireless and Internet usage and views on regulation and the benefits of competition.

Each reporting entity was assigned a separate company type and sub-type classification, which reflects historical legacies (e.g., incumbent in a specific industry prior to competition) and whether the company owns facilities (e.g., facilities-based or reseller). Where operating entities are part of a larger corporate family (defined as direct or indirect ownership above 50%), the longer historical legacy supersedes other classifications.

The following classifications and sub-classifications have been adopted for the purpose of this report:

- i) Incumbent telephone companies
 - a) large incumbent carriers
 - b) small incumbent carriers

- ii) Competitive service providers
 - a) Competitive (ILEC out-of-territory) service providers
 - b) Competitive (other) service providers
 - i) facilities-based competitive service providers
 - ii) resellers/pay telephone service providers
 - iii) cable service providers
 - iv) utility telcos

Wireless service providers are not identified separately under this classification structure. They are however categorized based on their affiliation with the other service providers. For example, the incumbent telephone companies wireless affiliates are categorized as incumbent and those of cable service providers are categorized as cable service providers.

This report is divided into the following sections and appendices:

- Section 2 discusses the role of market information in monitoring progress and changes within the industry.
- Section 3 provides an overview of the telecommunications industry and regulation, as well as an overall review of service providers in the market.
- Section 4 provides a review of financial information, including revenue, capital expenditures and other operational data for various sectors of the industry. It also examines the status of competition in each of the major market segments, including long distance, local and access, Internet and broadband, wireless, data and private line, and pay telephone.
- Section 5 reviews broadband availability and promising means for accelerating broadband deployment to rural and remote areas of the country.
- Section 6 provides information on residential consumers and business customers, including the results of the consumer survey commissioned by the Commission.
- Appendix 1 contains a summary of Canadian telecommunications milestones to competition.
- Appendix 2 contains a summary of Canadian telecommunications markets subject to forbearance rulings.
- Appendix 3 provides a summary of certain recent Commission rulings relevant to telecommunications competition.
- Appendix 4 contains a glossary of terms and acronyms used in this report.

2.0 The Role of Market Information

2.1 Overview

The Commission is largely responsible for the implementation of the Act enacted in 1993. Certain objectives of the Act, set out in section 7, are directly or indirectly tied to the notion of competition. For example, subsection 7(f) of the Act explicitly states that an objective is "to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective."

In providing an overview on the status of competition in the various telecommunications market segments in Canada, this report, as well as the ongoing monitoring of the telecommunications industry, will assist the Commission in the administration of the Act and the regulation of the industry.

The Commission is among a number of telecommunications regulatory bodies throughout the world that prepare regular monitoring reports. The use of monitoring reports has gained favour as a means of tracking ongoing industry developments to determine whether regulatory and legislative objectives are being met. This is particularly true of countries that place an emphasis on competition to replace traditional regulation of telecommunications services.

2.2 Competition and Monitoring

Although there are various means for measuring competition, good quality data is critical if the monitoring process is to be accurate and useful. For the most part, the Commission uses its own data collection mechanisms in order to gather detailed and timely information.

There is no single or simple way of assessing the state of competition in a market. The Commission collects information related to Canadian telecommunications markets in order to monitor the status of competition. This includes, among other things, (i) various measurements of market size and market share according to criteria, such as revenues and number of subscribers, lines and minutes, (ii) number and description of suppliers in the market, (iii) lists of available services, pricing levels and trends, and (iv) corporate financial conditions.

Specific elements of the monitoring exercise change over time to take into account new regulatory issues or market developments, such as new technologies, changes in the market structure or in domestic or international regulations or agreements, or the introduction of new or evolving services. Adaptability ensures that monitoring reports continue to be useful tools for all stakeholders, including regulators, customers and industry players.

3.0 Overview of the Telecommunications Industry and Regulation

3.1 Regulatory Oversight of Canadian Telecommunications Markets

The Commission has a broad range of powers to implement the policy objectives set out in section 7 of the Act, including the powers to ensure that rates are just and reasonable and that Canadian carriers do not discriminate unjustly or accord any undue preference with respect to the provision of telecommunications services.⁵ In addition to regulating the rates, terms and conditions under which telecommunications services are provided, the Commission has the power to forbear from regulating telecommunications services or classes of service where it finds, among other things, that there is sufficient competition to protect the interests of users.⁶

Industry Canada exercises powers relating to the allocation of radio spectrum under the *Radiocommunication Act*. Among other things, Industry Canada is responsible for developing spectrum allocation, spectrum utilization and service policies covering fixed and mobile terrestrial and non-terrestrial (i.e., satellite) wireless service applications. In this regard, it has the power to issue spectrum licences, either through an application process or a spectrum auction process.⁷ As well, Industry Canada has pursued spectrum licensing strategies that have increased potential entry into the various segments of the wireless market. It may also set the terms and conditions for any such licences as it deems appropriate.

While the Commission is responsible for regulating and for establishing the terms and conditions of competition in the telecommunications industry as a whole, Industry Canada determines the terms and conditions of entry in the wireless segment of the industry. Consequently, there is a shared responsibility for regulating the wireless portion of the telecommunications industry in Canada between the Commission and Industry Canada.

3.2 The Commission and Competition

In exercising its statutory powers both under predecessor legislation and the Act, the Commission has gradually and in an orderly manner opened up monopoly-based markets to competition over the years. The Commission's approach to opening up various market segments to competition is to weigh the potential advantages and disadvantages, and to strike a fair and reasonable balance between the often conflicting interests of all concerned, including incumbents, competitors and customers. The Commission forbears from regulation pursuant to section 34 of the Act, when it considers that a service or class of services is subject to a level of competition sufficient to protect the interests of users of the service.

⁵ Subsections 27(1) and 27(2) of the *Telecommunications Act*.

⁶ Section 34 of the *Telecommunications Act*.

⁷ Section 5 of the *Radiocommunication Act*.

The Commission continues to strive to render reliable and affordable services of high quality, accessible to both urban and rural area customers, to foster facilities-based competition, to provide incumbents with incentives to increase efficiencies and be more innovative, and to adopt regulatory approaches that impose the minimum regulatory burden possible. The Commission continues to remove obstacles to fair and sustainable competition, including eliminating barriers to access and ensuring regulatory compliance. In addition, the Commission maintains regulatory clarity through clear rules, clear determinations and the establishment of clear lines of communication. However, regulation is only a piece of the puzzle. Economic conditions are also an important part of the mix, as are technology development and the quality of business decision-making.

The Commission has put in place a range of other measures to encourage the development of competition in the remaining regulated sectors of the industry. For instance, the CRTC Interconnection Steering Committee (CISC) process provides a forum for interested parties, with the assistance of Commission staff, to resolve local competition implementation issues of a technological, operational or administrative nature.

A summary of the most significant milestones in opening telecommunications markets to competition is contained in Appendix 1.

When competitive disputes arise, the Commission encourages parties to explore various options to resolve the dispute, including bilateral negotiations, third-party mediation or staff assisted dispute resolution.

The Commission also conducts expedited procedures⁸ for resolving competitive issues that are factual in nature and relate to established rules and not to the creation of new ones. This process is an efficient and effective way of dealing with disputes. The expedited hearings generally result in decisions being issued within a week. In other cases, no application is necessary, or applications are withdrawn because the parties are able to resolve their issues with the help of Commission staff.

The Commission recognizes the need for timely disposition of tariff applications by companies for new or amended services. Taking into account the interests of incumbents, competitors and consumers, initiatives were taken to streamline and expedite the processing of retail tariff filings⁹ and the processing of applications concerning withdrawal of services for which new technologies are employed and for which there are replacement services.¹⁰

⁸ *Expedited procedure for resolving competitive issues*, Telecom Circular CRTC 2004-2, 10 February 2004.

⁹ *Introduction of a streamlined process for retail tariff filings*, Telecom Circular CRTC 2005-6, 25 April 2005.

¹⁰ *New procedures for disposition of applications dealing with the destandardization and/or withdrawal of tariffed services*, Telecom Circular CRTC 2005-7, 30 May 2005.

The Commission strives to minimize the regulatory burden on the industry, where appropriate. For example, in 2005, the Commission forbore from regulating approximately 800 additional interexchange private line routes.¹¹

Appendix 2 provides a summary of the most significant forbearance rulings since the Commission was granted this power in 1993. While the Commission has forbore and continues to forbear from regulating a growing number of services, at the same time, the Commission continues to regulate certain telecommunications services. In the case of large incumbents [including Aliant Telecom Inc. (Aliant Telecom), Bell Canada, MTS Allstream Inc. (MTS Allstream), Saskatchewan Telecommunications (SaskTel) and TELUS Communications Inc. (TCI)], these services include residential basic local services, business single and multi-line local services, local calling features and options, pay telephone, digital network access, local channels and competitor services. Starting in 1998, the regulation of these services (for all of these companies except SaskTel) changed fundamentally, shifting away from an earnings-based to a price level-based form of regulation.¹² The first price regulation regime covered the period 1998 to 2002. In 2002, it was reviewed and modified.¹³ The new regime, which now also applies to SaskTel, became effective in June 2002 and extends through to 2006.

Non-forborne telecommunications services provided by Société en commandite Télébec (Télébec) and TELUS Communications (Québec) Inc. (TCQ) (now part of TCI) were made subject to price cap regulation as of August 2002.¹⁴ In addition, non-forborne services provided by small incumbent telephone companies were made subject to a simplified form of price regulation effective in January 2002.¹⁵

In 2005, the Commission issued Telecom Public Notice CRTC 2005-2¹⁶ to initiate a proceeding and to invite comments, among other things, on a framework for forbearance from the regulation of residential and business local exchange services.

¹¹ *Forbearance from regulating additional interexchange private line services*, Telecom Decision CRTC 2005-18, 29 March 2005 (Decision 2005-18).

¹² *Price cap regulation and related issues*, Telecom Decision CRTC 97-9, 1 May 1997 (Decision 97-9).

¹³ *Regulatory framework for second price cap period*, Telecom Decision CRTC 2002-34, 30 May 2002 (Decision 2002-34).

¹⁴ *Implementation of price regulation for Télébec and TELUS Québec*, Telecom Decision CRTC 2002-43, 31 July 2002 (Decision 2002-43).

¹⁵ *Regulatory framework for the small incumbent telephone companies*, Decision CRTC 2001-756, 14 December 2001 (Decision 2001-756).

¹⁶ *Forbearance from regulation of local exchange services*, Telecom Public Notice CRTC 2005-2, 28 April 2005.

Steps were also taken to substantially reduce the administrative burden of filing quarterly and annual reports. Quarterly reporting requirements for (i) 911 Manual Access to ALI,¹⁷ (ii) Quality of Service - Network Outages¹⁸ and (iii) Affordability Monitoring¹⁹ were changed to an annual requirement. As discussed above, the Commission also reduced the administrative burden of filing data under the data collection process through the elimination of 20% of the data collection forms and the simplification of another 40% of the forms.

The Commission also reduced the regulatory requirements related to the application and renewal of international licenses by extending the license period from 5 years to 10 years and eliminating various conditions of licence.²⁰

As well, the Commission issued a number of recent rulings that further support the development of competition in the Canadian telecommunications industry. The most important recent rulings are summarized in Appendix 3.

3.3 Overview of the Telecommunications Services Industry

The Canadian telecommunications services industry plays a significant role in the Canadian economy as a whole. The industry's share of Canada's real gross domestic product (GDP) value added was 2.4% in 2004²¹ up from the 2003 level of 2.3%. The telecommunications industry ranked ninth in 2004 out of the 14 major service producing components of the GDP as listed by Statistics Canada.²²

¹⁷ *Filing of reports on 9-1-1 manual access to the ALI database and on incumbents' service interruptions to competitors*, Telecom Circular CRTC 2005-5, 4 April 2005 (Circular 2005-5).

¹⁸ *Filing of reports on 9-1-1 manual access to the ALI database and on incumbents' service interruptions to competitors*, Telecom Circular CRTC 2005-5, 4 April 2005.

¹⁹ *Modification to the affordability monitoring program for residential telephone service in Canada*, Telecom Decision CRTC 2004-73, 9 November 2004.

²⁰ *Basic international telecommunications services (BITS) licensing regime - Amendments*, Telecom Circular CRTC 2005-8, 23 June 2005.

²¹ Industry Canada, Information and Communication Technologies Statistical Overview (<http://strategis.ic.gc.ca/ictso>) Update: April 2005 ICT Sector Gross Domestic Product 2004 (in 1997 constant dollars).

²² Statistics Canada CANSIM Table(s); 379-0017 and Catalogue no.15-001-XIE.

Capital expenditures for telecommunications service providers also account for a significant portion of the overall capital expenditures in the Canadian economy. Telecommunications industry capital expenditures were 2.3% of total economy-wide capital expenditures in 2004,²³ up from the 2003 level of 2.2%. Capital expenditures for the industry increased in 2004 by 9.6%.²⁴ This increase was due, in part, to companies deploying new or advanced technologies to enter new markets. For example, cable companies were preparing to enter the local and access market utilizing Internet Protocol (IP) technology and thereby offering subscribers a broader range of services. Telephone companies were augmenting and/or upgrading their networks to take advantage of IP technology and expanding the Digital Subscriber Line (DSL) footprint to offer their subscribers a broader range of services.

Telecommunications employment, as displayed in Table 3.3.1 increased 2.5% annually from 103.7 thousand employees in 2000 to 114.3 thousand employees in 2004.

Table 3.3.1
Telecommunications Services Employment
(Thousands)

Year	Employees
2000	103.7
2001	104.9
2002	105.1
2003	110.8
2004	114.3

Source: Statistics Canada

In 2004, the number of employees in the Canadian telecommunications services industry represented 0.9% of total employees in Canada.²⁵

Telecommunications services revenues were \$33.3 billion in 2004.²⁶ This represents an annual growth rate of 3.6% over the 2000 level of \$28.9 billion. Table 3.3.2 provides a summary of the total telecommunications services revenues for each of the five years.

²³ Capital Expenditures economy wide for 2004 was \$243,871.4 million. These are preliminary actuals reported by Statistics Canada as of 30 August 2005. Source - Statistics Canada table 029-005 and Cat. no. l61-205-XIB.

²⁴ CRTC Data Collection (excluding spectrum).

²⁵ Industry Canada - *Telecommunications Service in Canada: An Industry Overview*; [updated 11 August 2005] Section 1, Table 1-2.

²⁶ This amount includes estimates that were made for entities that were unable to complete the forms on time. This estimate, generally referred to as undercoverage, was used for the Internet market.

Table 3.3.2
Total Telecommunications Services Revenues
(\$ billions)

Year	Total telecommunications services revenues
2000	28.9
2001	31.4
2002	31.5
2003	31.8
2004	33.3

Source: CRTC Data Collection

3.4 Penetration Rates

Penetration rates provide a useful general indicator of consumer access to telecommunications networks.

For the purposes of this report, penetration rates are measured by identifying the percent of households that have access to the network. Penetration rate data for Canada, including wireline, wireless, wireline and/or wireless and wireless only, covering the period 1999 to 2003, is summarized below in Table 3.4.1.²⁷

The penetration rate of wireline and/or wireless has remained relatively constant over the years 1999 to 2003 at approximately 98.8% of households. Wireline penetration has gradually declined over this period from 98.2% to 96.3% of households. In contrast, wireless penetration increased almost 70% over this period, reaching 53.9% of households in 2003. The penetration rates in Table 3.4.1 indicate that 2.5% of Canadian households had only a wireless service in 2003, up five-fold from 0.5% in 1999.

²⁷ June 2005 Affordability Monitoring Report pursuant to *Modification to the affordability monitoring program for residential telephone service in Canada*, Telecom Decision CRTC 2004-73, 9 November 2004.
Data source: Statistics Canada.

Table 3.4.1
Canadian Penetration Rates
Wireline Access Lines and Wireless Subscribers
(per 100 households)

Year	Wireline	Wireless	Wireline and/or wireless	Wireless (only)
1999	98.2	31.9	98.7	0.5
2000	97.7	41.8	98.8	1.1
2001	97.4	47.6	98.6	1.2
2002	97.0	51.6	98.7	1.7
2003	96.3	53.9	98.8	2.5

Source: Statistics Canada

3.5 Market Participants

The Commission maintains registration lists²⁸ of service providers that either operate or propose to operate in the Canadian telecommunications industry. There are over 1,000 telecommunications service providers on these lists. These service providers were contacted and issued the Reporting Entity Profile (REP) form to file as part of the data collection process discussed in section 1.2.

As noted in section 1.2, these providers are classified as follows:

- 1) *Incumbents* are the telephone companies that provided telecommunications services on a monopoly basis prior to the introduction of competition. However, for the purposes of this report, the operating results of these companies from their activities outside their traditional operating territory are included with the competitor (ILEC out-of-territory) group discussed below.
 - a) *Large Incumbents* are those incumbents serving relatively large serving areas, usually including both rural and urban populations, and providing local, long distance, wireless, Internet, data, private line and other services. The large incumbent companies include Aliant Telecom, Bell Canada, MTS Allstream, SaskTel and TCI, as well as Northwestel Inc. (Northwestel), Télébec, and TCQ.

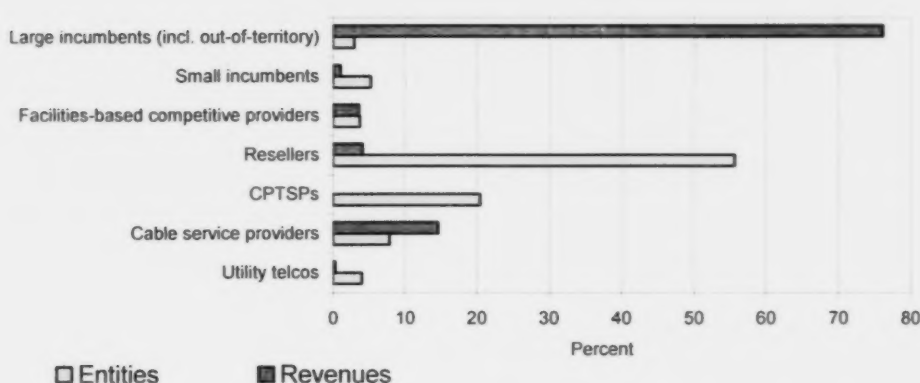
²⁸ Separate lists are maintained for non-dominant carriers, competitive local exchange carriers (CLECs), carriers, basic international telecommunications services (BITS), competitive pay telephone service providers (CPTSPs), digital subscriber line (DSL) providers, independent carriers, resellers and resellers of Internet high-speed service. These lists can be viewed at: <http://www.crtc.gc.ca/eng/lists.htm>.

- b) *Small Incumbents* are those incumbents serving relatively small serving areas (mostly municipal areas generally located in less densely populated areas) in Ontario, Quebec and, in one instance, British Columbia. Due to the limited size of their serving areas, they typically do not provide facilities-based long distance services. However, they do provide a range of local voice, data, Internet and wireless services. The small incumbents include companies such as NorthernTel, Limited Partnership and TBayTel.
- 2) *Competitors* are providers of telecommunications services that are not incumbent telephone companies discussed in (1) above. However, this group includes incumbent companies operating outside their traditional operating territory such as Navigata. Competitors are subdivided as follows:
- a) Competitors (ILEC out-of-territory) are the incumbent companies operating outside their traditional operating territory. This includes both subsidiaries and divisions of the incumbents providing telecommunications services outside their traditional operating territory such as TCI's operations in Ontario.
- b) Competitors (other) are providers of telecommunications services that are not incumbent telephone companies.
- i) *Facilities-based competitive service providers* are those competitive service providers that own physical transmission facilities (e.g., inter-city, intra-city, or local). These service providers include such companies as Call-Net Enterprises Inc. (now Rogers Telecom Holdings Inc. (Rogers Holdings)) and FCI Broadband (a division of Futureway Communications Inc.)
- ii) *Resellers* are non-facilities-based competitive service providers. These service providers include Primus Telecommunications Canada Inc., Distributel Communications Limited, YAK Communications (Canada) Inc., and many others, including independent Internet service providers (ISPs).
- iii) *Competitive Pay Telephone Service Providers (CPTSPs)* are competitive service providers that provide public telecommunications services by way of pay telephones.
- iv) *Cable service providers* are the former cable monopolies that also provide telecommunications services (e.g., Internet, wireless and voice). These cable service providers include such companies as Rogers Communications Inc. (Rogers), Shaw Communications Inc. (Shaw), Le Groupe Vidéotron Itée, Cogeco Inc. and Bragg Communications Incorporated (EastLink).
- v) *Utility telcos* are service providers whose market entry into telecommunications services, or whose corporate group's market entry into telecommunications services, was preceded by a group-member company's activity in the electricity, gas or other utility business. These service providers include such companies as Hydro One Telecom Inc., Toronto Hydro Telecom Inc. and FibreWired Network.

As previously discussed in section 1.2 and noted in the classification structure above, wireless companies are classified based on the affiliate relationship of the service providers.

As displayed in Figure 3.5.1, approximately 55% of the service providers are resellers, representing the single largest group of telecommunications service providers operating, or who propose to operate, in the Canadian telecommunications industry. Although the resellers represent 55% of the participants, as a group, they captured approximately 4% of the revenues.

Figure 3.5.1
Distribution of Telecommunications Service Providers



Source: CRTC Telecommunications Lists

The incumbents, including their out-of-territory and wireless operations, were approximately 3% of the number of participants, capturing approximately 76% of the revenues making them the largest group with respect to revenues. Cable service providers were the third largest group with 8% of the number of participants, capturing 15% of the revenues. As a result, they were the second largest group in terms of telecommunications revenues. Over 95% of the cable providers' revenues was related to Internet and wireless services.

Each of the reporting entities was assigned to one of the above-noted categories. Certain categories of competitive service providers were combined, as separate reporting would have resulted in residual disclosure of confidential information. Also, certain figures and percentage growth calculations may not reconcile due to rounding.

As discussed in section 4.0, there were a number of major acquisitions in 2004 that impact the assignment of revenues to the above-noted categories. In the case of competitors acquiring other entities, the revenues from the acquired company were reassigned to the same category as the competitor that acquired the company. However, in the case of incumbents, the revenues from the acquired company, generated within the traditional operating territory of the incumbent, were reassigned to the incumbent category and the remaining revenues were assigned to competitor (ILEC out-of-territory).

Incumbent carriers' out-of-territory activities are generally captured within the various sections of the report with the competitors (ILEC out-of-territory) group as discussed above. However, in certain cases this was not possible. In these cases, the incumbent carriers' out-of-territory activities were included with the incumbent and are noted as incumbent (incl. ILEC out-of-territory).

A summary of total telecommunications service revenues in aggregate and by type of market participant for the five year period 2000 to 2004 is provided in Table 3.5.1 below. As Table 3.5.1 demonstrates, the incumbents' share of the industry's total telecommunications service revenues increased from 75% in 2003 to 77% in 2004 due to the acquisitions of several facilities-based competitors by the incumbents.

Table 3.5.1
Total Telecommunications Services Revenues
by Type of Market Participant
(\$ millions)

	2000	2001	2002	2003	2004
Incumbents Carriers (incl. out-of-territory)					
Large	22,622.9	24,541.0	23,560.4	23,483.9	25,410.2
Small	278.4	281.9	319.5	311.9	369.0
Sub-total	22,901.3	24,822.9	23,879.9	23,795.8	25,779.2
Percent of total	79%	79%	76%	75%	77%
Competitors (other)					
Facilities-based	3,310.9	3,391.3	3,247.3	3,141.5	1,001.8
Resellers/CPTSPs	625.0	709.2	1,217.6	1,315.2	1,558.6
Cable providers	2,037.7	2,448.4	3,009.2	3,432.9	4,875.8
Utility telcos	5.6	31.2	104.5	132.3	95.5
Sub-total	5,979.2	6,580.1	7,578.6	8,021.9	7,531.8
Percent of total	21%	21%	24%	25%	23%
Total	28,880.5	31,403.0	31,458.5	31,817.7	33,311.0

Source: CRTC Data Collection

4.0 Status of Competition

4.1 Financial Review of Markets

Highlights

- Telecommunications industry service revenues increased 4.7% in 2004, with wireline revenues increasing 0.3% and wireless revenues increasing 17.6%.
- Telecommunications industry capital expenditures increased from \$5.2 billion in 2003 to \$5.7 billion in 2004, a 9.6% increase.
- Telecommunications industry earnings before interest, taxes, depreciation and amortization (EBITDA) increased from \$10.9 billion in 2003 to \$11.5 billion in 2004, a 5.5% increase.

Part A - Telecommunications Revenues

Overview - Market Segment Revenues

Telecommunications revenues include revenues from both wireline and wireless service offerings. Wireline service revenues include local and access, long distance, data and private line and Internet service revenues, but exclude revenues from terminal equipment sales and rentals. Wireless service revenues include mobile and paging service revenues as well as the terminal equipment revenues generated within this market segment.

As shown below in Table 4.1.1, wireline revenues increased 0.3% from \$23.8 billion in 2003 to \$23.9 billion in 2004.

Table 4.1.1
Total Telecommunications Service Revenues²⁹
(\$ billions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Wireline	23.3	25.0	24.4	23.8	23.9	0.3%	0.6%
Wireless	5.6	6.4	7.1	8.0	9.5	17.6%	14.1%
Total	28.9	31.4	31.5	31.8	33.3	4.7%	3.6%

Source: CRTC Data Collection

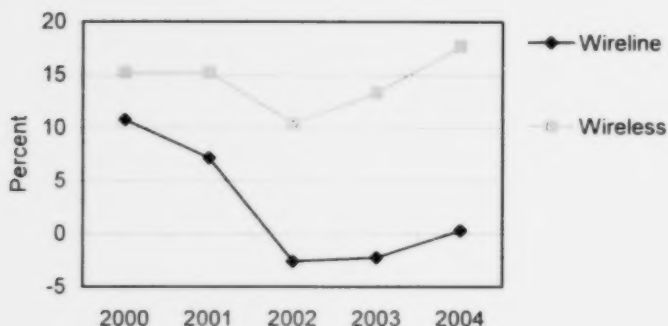
Note: CAGR refers to Cumulative Annual Growth Rate

²⁹ Total Telecommunications Service Revenues consist of the telecommunications service revenues of all companies surveyed. Wireline terminal equipment as well as other non-telecommunications revenues were excluded. Estimates were used to capture the revenues of the smaller entities that were not required to complete data forms. These estimates were based on the information provided by the entities in their reporting entity profile (REP) forms.

This 0.3% increase was accompanied by wireless growth, which was still strong at 17.6%. Wireless revenues increased from \$8.0 billion in 2003 to \$9.5 billion in 2004. Total telecommunications revenues increased from \$31.8 billion in 2003 to \$33.3 billion in 2004, a \$1.5 billion or 4.7% increase.

As shown in Figure 4.1.1 below, wireline revenue after displaying strong growth of 11% in 2000, declined to a negative growth rate of 3% in 2002 and remained negative until 2003. In 2004 the growth rate became a positive 0.3%. In contrast, wireless revenue growth has been strong since 2000, at approximately 15%, dipping in 2002 to 10% and then recovering to 13% in 2003 and increasing to 17.6% in 2004.

Figure 4.1.1
Wireline and Wireless Annual Revenue Growth Rates (%)



Source: CRTC Data Collection

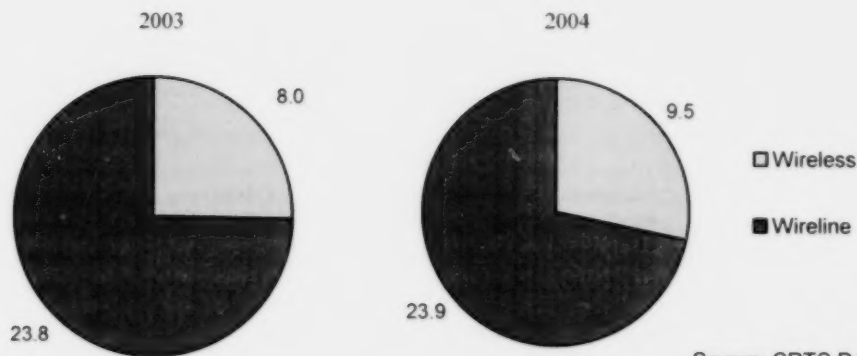
Table 4.1.2 below illustrates that the long distance and data and private line revenues displayed a downward revenue trend in 2004 of 6% and 1.6% respectively. The local and access revenues remained relatively unchanged. The Internet segment revenues displayed a growth of 12.9%. Declining prices and reduced demand in the private line market resulted in a decrease in data and private line revenues of \$0.1 billion. Long distance revenues declined \$0.3 billion mostly due to declining prices. Despite the declining growth rates in some wireline segments, total wireline services still represent the majority (72%) of telecommunications service revenues as displayed in Figure 4.1.2.

Table 4.1.2
Segmented Telecommunications Service Revenues
(S billions)

	2002	2003	2004	<i>Growth 2003-2004</i>	<i>CAGR 2002-2004</i>
Wireline					
Long distance	6.5	5.9	5.6	-6.0%	-7.5%
Local and access	10.0	9.7	9.7	0.0%	-1.6%
Data & private line	4.5	4.5	4.4	-1.6%	-1.5%
Internet	3.3	3.7	4.2	12.9%	12.6%
Total wireline	24.4	23.8	23.9	0.2%	-1.0%
Wireless	7.1	8.0	9.5	17.6%	15.5%
Total industry	31.5	31.9	33.3	4.6%	2.9%

Source: CRTC Data Collection

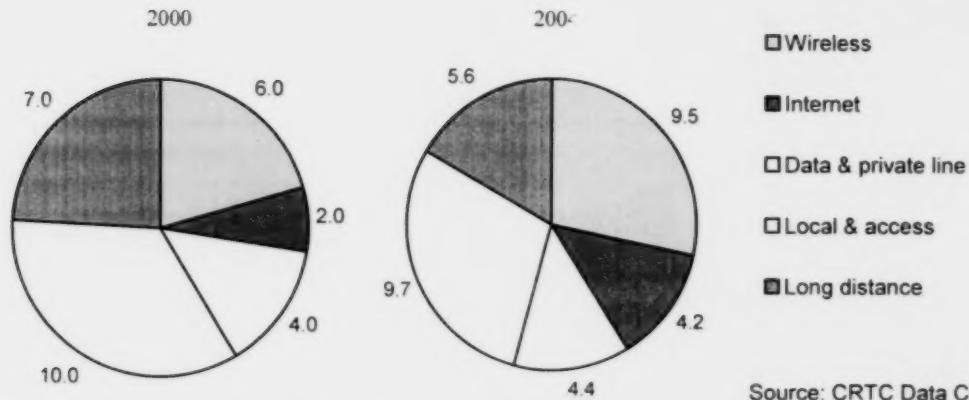
Figure 4.1.2
Total Service Revenues
Wireline v. Wireless
(S billions)



Source: CRTC Data Collection

Figure 4.1.3 below compares the segmented telecommunications service revenues of 2000 with 2004. Long distance revenues decreased from 2000 to 2004, while Internet and wireless service providers experienced an increase in annual revenues from 2000 to 2004 of 137% and 70% respectively. Revenues from data and private line services, however peaked in 2001 as displayed in Table 4.6.1 in Section 4.6, and have since declined by 4%. Local and access revenues also peaked in 2001 and then decreased by 11% in 2002 and have since declined by 3%, as displayed in Table 4.3.1 in Section 4.3.

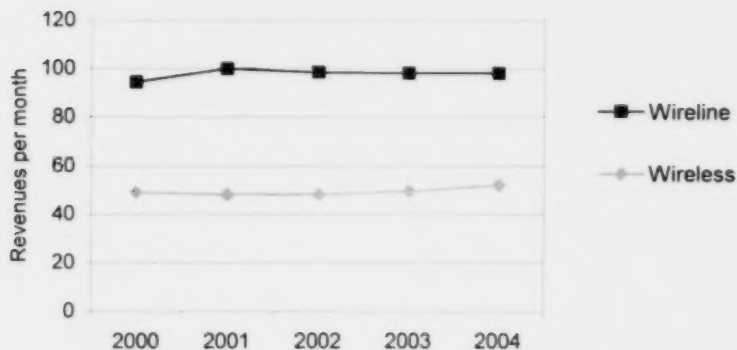
Figure 4.1.3
Segmented Telecommunications Service Revenues
(\$ billions)



Source: CRTC Data Collection

Figure 4.1.4 below shows that the average monthly wireline revenue per line has remained relatively unchanged at \$98. Monthly wireless revenue per subscriber has been steadily increasing from \$48 in 2002 to \$52 in 2004.

Figure 4.1.4
Average Monthly Revenue per Line/Subscriber



Source: CRTC Data Collection

The local and access portion of the monthly revenue per line in 2004 for wireline service providers was roughly 41% of the total monthly revenue per line.

Part B - Key Financial Indicators³⁰

The following section provides a broader indication of the state of the Canadian telecommunications industry than can be achieved only through the study of service revenues. In addition to revenue, key indicators such as EBITDA and capital expenditures can also be used to determine the financial state of the Canadian telecommunications industry. Due to the difficulty of determining these financial indicators for the out-of-territory operations of the incumbents, the financial results of the incumbents include their out-of-territory operations.

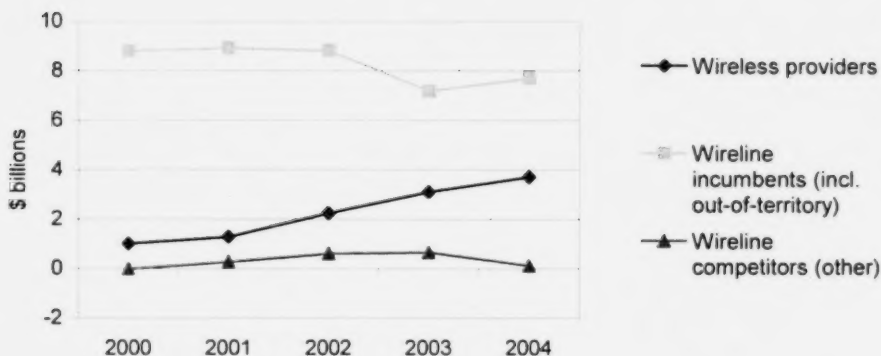
a) *EBITDA*

As shown in Figure 4.1.5 below, wireless service providers experienced continued growth in EBITDA in 2004. These providers registered a 19.4% increase in EBITDA from \$3.1 billion in 2003 to \$3.7 billion in 2004, increasing their share of the industry EBITDA from 28% in 2003 to 32% in 2004. The wireline EBITDA declined slightly in 2004 from \$7.83 billion in 2003 to \$7.81 billion in 2004, a 0.2% decline.

Wireline competitors' (other) EBITDA was \$0.11 billion in 2004, a decrease of 83%. The wireline incumbents' EBITDA, including their out-of-territory operations, increased from \$7.2 billion in 2003 to \$7.7 billion, a \$0.5 billion or 7.0% increase. The EBITDA for the industry as a whole increased from \$10.9 billion in 2003 to \$11.5 billion in 2004. The wireline competitors' (other) share of the industry EBITDA decreased from 6% in 2003 to 0.9% in 2004, while that of the wireline incumbents, including their out-of-territory operations, increased from 66% in 2003 to 67% in 2004.

³⁰ It is important to note that the universe surveyed for the calculation of these metrics differs slightly from the universe surveyed in the calculation of the Telecommunications Service Revenues calculated in Tables 4.1.1 and 4.1.2. Notably, companies whose primary source of revenue is not telecommunications service have been excluded entirely, as have providers who were unable to segment the key financial data related to the telecommunications portion of their operations.

Figure 4.1.5
Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA)
by Provider Type



Source: CRTC Data Collection

b) Telecommunications Expenditures

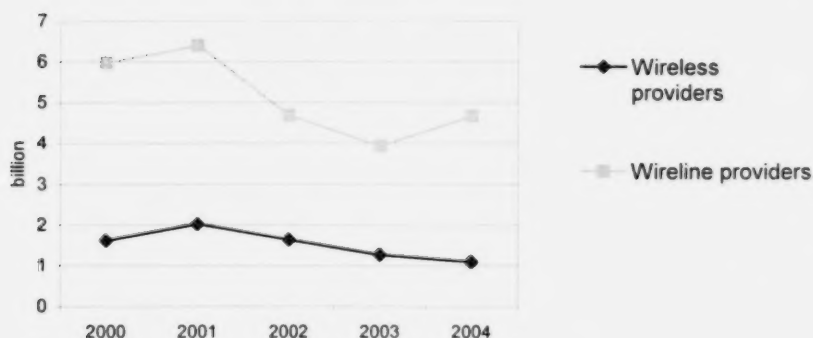
The main costs of provisioning telecommunications services are capital expenditures related to the building of an entity's own facilities or inter-carrier expenses related to acquiring access to the facilities of other entities. The industry's gross plant-in-service in 2004 amounted to \$58.7 billion.

Capital expenditures in the Canadian telecommunications industry for the period 2000 to 2004 are displayed below in Figure 4.1.6, by type of provider. Total capital expenditures in the Canadian telecommunications industry were \$5.7 billion in 2004, a 9.6% increase from \$5.2 billion in 2003.

Wireline capital expenditures increased from \$3.9 billion in 2003 to \$4.7 billion in 2004, a 20.5% increase, whereas wireless capital expenditures, excluding spectrum, decreased from \$1.3 billion in 2003 to \$1.1 billion in 2004, a decrease of 15.4%.

Wireline capital expenditures accounted for \$4.7 billion or 82% of industry capital expenditures in 2004.

Figure 4.1.6
Capital Expenditures by Provider Type



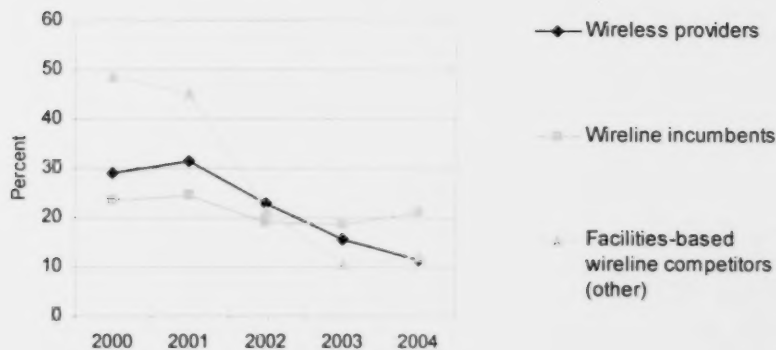
Source: CRTC Data Collection

Capital Intensity

As shown below in Figure 4.1.7, the capital expenditures per revenue dollar for wireless service providers, wireline incumbents, including their out-of-territory operations, and facilities-based wireline competitors have shifted significantly over the past five years. While the wireline incumbents had the lowest capital expenditures per revenue dollar in 2000, in 2004, they had the highest rate at approximately 21%; whereas facilities-based competitors had the highest capital expenditures per revenue dollar of 49% in 2000, they are now among the lowest at 12%.

Wireless providers showed a decrease in their capital expenditures per revenue dollar over the past three years, dropping from 31% in 2001 to 11% in 2004. This decrease resulted from reduced expenditures and increased revenues. Increased coverage through roaming agreements has minimized the need to expand facilities.

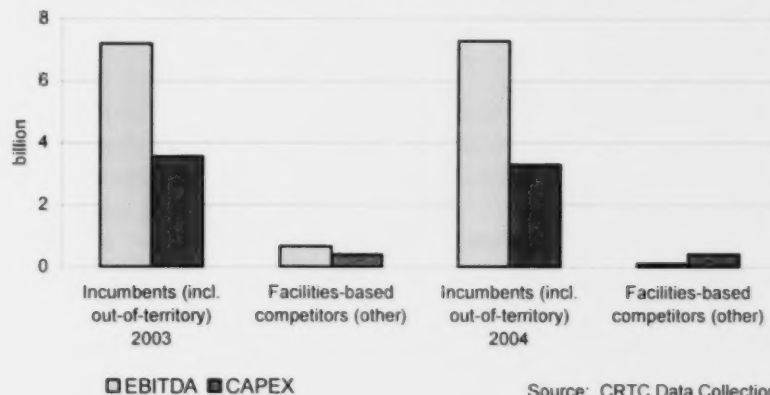
Figure 4.1.7
Capital Expenditure per Revenue Dollar



Source: CRTC Data Collection

Figure 4.1.8 below, compares EBITDA and capital expenditures for incumbents, including their out-of-territory operations, and facilities-based competitors (other) for the years 2003 and 2004. The data shows that in each year, the incumbents' EBITDA exceeded their capital expenditures, indicating that the incumbents are generally able to rely on internally generated funds to finance their expenditures. This has not generally been the case with the facilities-based competitors. The level of capital expenditures and EBITDA for facilities-based competitors was minimal in 2004. This can be attributed to industry consolidations and to a lesser extent a declining EBITDA in 2004, which limited their ability to finance these expenditures.

Figure 4.1.8
Wireline EBITDA v. Wireline Capital Expenditures (CAPEX)



Source: CRTC Data Collection

c) *Inter-carrier Payments*

Table 4.1.3 below displays inter-carrier payments, excluding settlement, on a per revenue basis for incumbents, including their out-of-territory operations, and competitors (other) in the wireline industry by market sector. In 2004, as in the previous year, the competitors (other) had significantly higher inter-carrier payments per revenue dollar in each sector except for the Internet sector. In the local and access market these payments, as a percent of revenues, increased from 52% to 58% for the competitors (other). The inter-carrier payments per revenue dollar for competitors (other) in the data and private line sector also increased from 36% to 46%. The increase, in competitor inter-carrier payments per revenue dollar for long distance, from 41% to 48% may be attributed to the long distance calling plans that tend to increase with long distance minutes.

Table 4.1.3
Inter-carrier Payments per Revenue Dollar
by Wireline Market Sector³¹

	Local			Long Distance			Data & Private Line			Internet			Total		
	2002	2003	2004	2002	2003	2004	2002	2003	2004	2002	2003	2004	2002	2003	2004
Incumbents (incl. out of territory)	n/a	1%	2%	8%	16%	23%	29%	28%	20%	21%	17%	6%	9%	11%	9%
Competitors (other)	78%	52%	58%	30%	41%	48%	44%	36%	46%	12%	17%	7%	34%	25%	17%

Source: CRTC Data Collection

n/a Due to residual disclosure issues, these expenses have been combined with competitors' expenses.

d) *Industry Developments*

A number of significant shifts in the make-up of the Canadian telecommunications market occurred during 2003 and 2004. For example, the major players have recognised the potential impact that Internet protocol (IP) may have on their operations or networks and on the services offered. As noted above, providers have made expenditures on IP and virtually every major wireline service provider has announced a VoIP initiative directed at business customers, residential customers, or both.

³¹ Inter-carrier expenses do not include contribution payments.

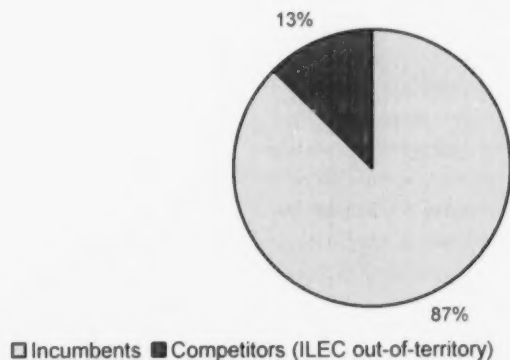
Incumbent Out-of-Territory Operations

In 2004, a number of larger competitors were acquired by regional incumbents as they continued to expand beyond their traditional territories. MTS, through its acquisition of Allstream, suddenly became the third largest service provider in the country and a national player with a presence in eastern Canada. Bell Canada strengthened its position in western Canada through the acquisition of the Canadian operations of 360networks. As part of the deal, Bell Canada sold 360networks' eastern Canadian customer base to Call-Net Enterprises Inc. (Call-Net). Rogers Wireless Inc. (RWI) purchased the shares of Microcell. Bell Canada also assumed 100% ownership of Bell West by purchasing the remaining (40%) shares held by MTS (now MTS Allstream). More recently, in 2005 Call-Net was acquired by Rogers.

Figure 4.1.9 shows that for incumbents with out-of-territory operations in 2004 their revenues from these activities represented approximately 13% of their total wireline revenues.

When compared to the competitor (other), the competitors (ILEC out-of-territory) revenues are approximately 62% of the revenues of the competitor (other).³²

Figure 4.1.9
Competitors (ILEC out-of-territory) Revenues
v.
The Incumbents Wireline Revenues (2004)



Source: CRTC Data Collection

³² CRTC Data Collection.

e) Service Bundling

Over the past number of years, telecommunications service providers have increasingly relied on the packaging or bundling of various services to maintain or increase their revenues. For example, those providing local service are increasingly bundling long distance service with their local service offering.

Service providers that offer the full spectrum of telecommunications services are well positioned to take full advantage of the benefits of bundling services. Companies that are not full service providers who want to realize the benefits of bundling are required to make agreements with other service providers to complement their service offerings.

Summary

Revenues in the Canadian telecommunications industry increased by approximately 4.7% in 2004. Within the service segments, strong growth in both the Internet access and wireless service revenues of 12.9% and 17.6%, respectively, continued in 2004. The increases in both these service segments were again mostly offset by declines in long distance (6%), and in data and private line (1.6%) revenues. Local and access revenues remained relatively unchanged. Monthly revenue per line for wireline service providers has remained relatively unchanged since 2002 at \$98 while monthly wireless revenues per subscriber has been steadily increasing from \$48 in 2002 to \$52 in 2004.

The wireline share of telecommunications service revenues continued to decrease from 75% in the previous year to 72% in 2004 due to the strong growth of the wireless industry. Wireline incumbents continued to have the largest portion (77%) of total telecommunications revenues.

The industry EBITDA experienced an increase from \$10.9 billion in 2003 to \$11.5 billion in 2004, a 5.5% increase. The wireline share of the industry EBITDA decreased from 72% in 2003 to 68% in 2004, as wireless increased its EBITDA from \$3.1 billion in 2003 to \$3.7 billion in 2004.

Total capital expenditures in the Canadian telecommunications industry were \$5.7 billion in 2004 a 9.6% increase from 2003. With the expected move to IP technologies and the growth of IP-based networks, companies are anticipating lower operating costs that would improve operating margins. The competitive market may put pressure on the incumbents and competitors to share some of these cost savings with consumers in the form of lower prices.

4.2 Long Distance

Highlights

- Long distance revenues continued to decline, decreasing from \$5.9 billion in 2003 to \$5.6 billion in 2004, a 6% decline.
- Long distance minutes continued to grow, increasing from 55.8 billion minutes in 2003 to 59.2 billion in 2004, a 6% increase.
- The incumbents' share of long distance revenues remained relatively unchanged at 67%.
- Within the retail market, competitors' share of the long distance revenues in 2004 remained relatively unchanged over the previous year at 31%.

Sector Description

a) Description of Services

The long distance market sector encompasses wireline voice traffic to a location outside the local service calling area. Wireline long distance services are sold in a variety of fashions, ranging from a standard per minute charge to a monthly fixed charge plan provided by a pre-selected Primary Inter-exchange Carrier (PIC), to the use of dial-around services that bypass the PIC'd carrier to use another long distance service provider's services. Long distance traffic was traditionally transmitted via the circuit switched network. In 2004, several service providers were offering voice communication services using IP technologies.

b) Markets and Observations

Table 4.2.1 provides long distance revenues and minutes for the period 2000 to 2004. Revenues include retail revenues from long distance services sold to the residential and business customer, wholesale revenues for long distance traffic sold to other service providers for the purposes of resale, and settlement revenues paid to carriers for the transport of traffic outside a service provider's operating territory. Long distance minutes include both retail and wholesale minutes, but exclude minutes associated with domestic and international settlement revenues.

Table 4.2.1
Total Long Distance Revenues and Minutes

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Revenues (\$ millions)	7,126	6,700	6,534	5,944	5,588	-6.0%	-5.9%
Minutes (millions)	50,885	52,977	54,835	55,820	59,175	6.0%	3.8%

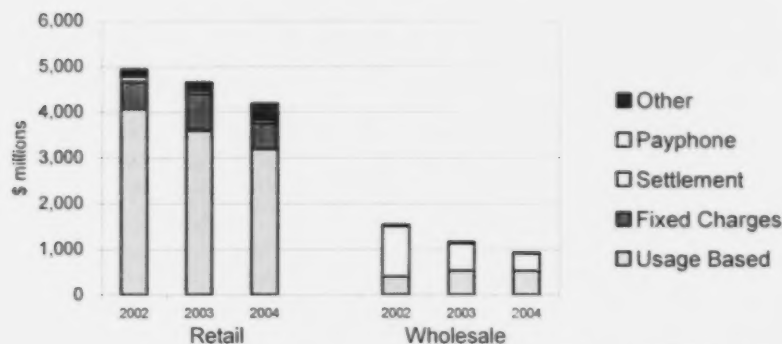
Source: CRTC Data Collection

The effects of competition continue to be evident in the number of optional long distance package alternatives available, the number of service providers who offer these and declining prices. Many long distance service providers made progress on IP network transformation in 2004 which may result in improved operating margins for long distance service providers. However, competitive pressure transferred some of these savings to consumers in the form of lower long distance prices, resulting in lower revenues but higher long distance minutes. As well, long distance service is increasingly bundled with local service by the competitive local service providers when promoting local services.

Figure 4.2.1 outlines the long distance revenue components split between retail and wholesale, for the period 2002-2004. Retail revenues constituted 83% of total long distance revenues in 2004, up slightly from 81% in 2003. Usage-based revenues also declined in 2004 by 11%.

Wholesale revenues continued to decrease from 19% of long distance revenues in 2003 to 17% in 2004. Usage-based revenues, which constitute the major portion in 2004, increased to \$0.5 million or 57% of wholesale revenues. Settlements continued to decline from \$0.6 billion or 51% of wholesale revenues in 2003, to \$0.4 billion or 40% of wholesale revenues in 2004.

Figure 4.2.1
Long Distance Revenues by Component



Source: CRTC Data Collection

c) Sector Participants

The sector participants primarily include the large incumbent telephone companies, facilities-based carriers providing both local and switched long distance services, and a variety of resellers who either resell long distance service or provide long distance service using facilities typically purchased from either the incumbent or interexchange facilities-based carriers. The large incumbents also provide long distance service outside their traditional territories either directly or through a separate subsidiary. The incumbents' activities within their traditional operating territories are referred to as incumbent, whereas, their out-of territory operations are referred to as competitor (ILEC out-of-territory). The remaining competitors are referred to as competitor (other).

In addition to selecting their PIC for long distance traffic, retail long distance customers also have the option of using alternative carriers, by "dialing around" their PIC carrier. This option is typically provided via either prepaid card or dial-around service providers. In 2004, revenues from these services constituted approximately 7% of retail long distance revenues.

d) Regulatory Framework

Competition in the long distance market began in 1990 with the resale of certain switched long distance services (Decision 90-3).³³ In 1992, the market was further opened to include facilities-based carriers (Decision 92-12).³⁴ In 1998, pursuant to Decision 97-19,³⁵ the Commission forbore from regulating the incumbents' long distance service rates, with the exception of Northwestel, with certain conditions imposed on the incumbents, most notably price ceilings applying to each basic long distance rate schedule.

The Commission has forbore from regulating the long distance market through a series of decisions that addressed various market players and market segments (Decision 94-19,³⁶ Decision 95-19,³⁷ Decision 97-10,³⁸ Decision 97-19, Order 99-1202³⁹).

³³ *Resale and sharing of private line services*, Telecom Decision CRTC 90-3, 1 March 1990.

³⁴ *Competition in the provision of public long distance voice telephone services and related resale and sharing issues*, Telecom Decision CRTC 92-12, 12 June 1992.

³⁵ *Forbearance - Regulation of toll services provided by incumbent telephone companies*, Telecom Decision CRTC 97-19, 18 December 1997.

³⁶ *Review of regulatory framework*, Telecom Decision CRTC 94-19, 16 September 1994.

³⁷ *Forbearance - Services provided by Non-dominant Canadian carriers*, Telecom Decision CRTC 95-19, 8 September 1995.

³⁸ *Teleglobe Canada Inc. - Resale and Sharing of international private line services*, Telecom Decision CRTC 97-10, 5 May 1997.

³⁹ *Forbearance for agreements between domestic and foreign common carriers*, Telecom Order CRTC 99-1202, 22 December 1999.

While the Commission has forborne from regulating the long distance market, it continues to regulate the local and access market, which determines the competitive long distance carrier's cost to interconnect with an ILEC's facilities. The direct connect rates were reviewed in 2002 and again in 2003 resulting in reductions in these rates, which are paid by long distance providers to ILECs for originating and terminating long distance traffic.⁴⁰

Market Segments

Long Distance

Table 4.2.2 presents a summary of long distance revenues by residential, business and wholesale segments for the period 2000 to 2004.

Table 4.2.2
Long Distance Revenues by Market Segment
(\$ millions)

	2000	2001	2002	2003	2004	Growth 2003-2004	CAGR 2000-2004
Residential	3,211	3,007	3,038	3,013	2,857	-5.2%	-2.9%
Business	2,209	2,081	1,970	1,777	1,790	0.7%	-5.1%
Wholesale	1,706	1,612	1,526	1,154	941	-18.4%	-13.8%
Total	7,126	6,700	6,534	5,944	5,588	-6.0%	-5.9%

Source: CRTC Data Collection

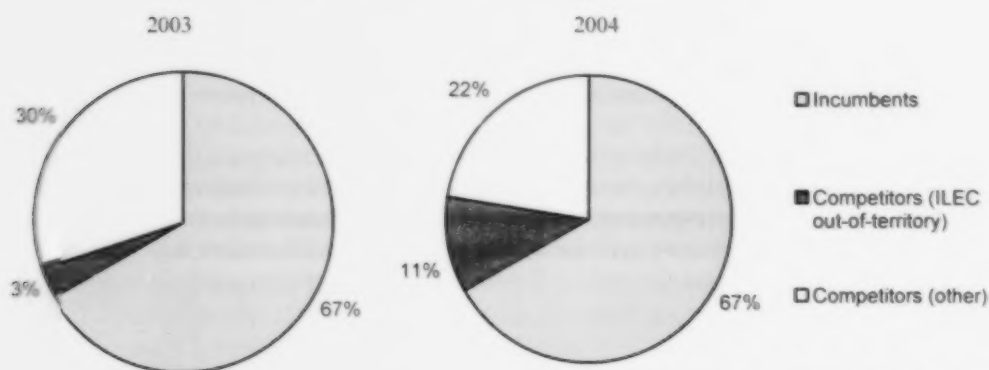
In 2004, long distance revenues declined by 6.0%, to \$5.6 billion. The largest decline was experienced within the wholesale market, which includes settlement payments between carriers for transmission and/or termination of another carrier's traffic. Wholesale revenues declined by 18.4%, or \$0.2 billion, in part due to carriers continuing to lower settlement and wholesale rates for the transport and termination of long distance traffic. As a percentage of total long distance revenues, wholesale revenues continued a downward trend from 19.4% in 2003 to 16.8% in 2004.

Residential revenues declined from \$3.0 billion in 2003 to \$2.9 billion in 2004, a \$0.1 billion or 5% decline. By contrast, business revenues remained relatively unchanged at \$1.8 billion. As a percentage of total long distance revenues, business revenues increased from 29.9% in 2003 to 32.0% in 2004, and residential revenues increased from 50.7% in 2003 to 51.1% in 2004.

⁴⁰ *Regulatory framework for second price cap period*, Telecom Decision CRTC 2002-34, 30 May 2002, *Direct Connection service*, Telecom Decision CRTC 2003-83, 17 December 2003, *Rates for co-location floor space*, *Direct Connection service*, *Wireless Access Service: Line-side Access services and Wireless Service Providers Enhanced Provincial 9-1-1 Network Access service*, Telecom Decision CRTC 2003-12-1, 19 November 2003.

The decline in residential revenues can be attributed, in large part, to competitive pricing pressures and bundling of long distance services in packages provided by the carriers. As displayed in Figure 4.2.2, incumbents' share of long distance revenues remained unchanged in 2004.

Figure 4.2.2
Long Distance Revenue Market Share⁴¹

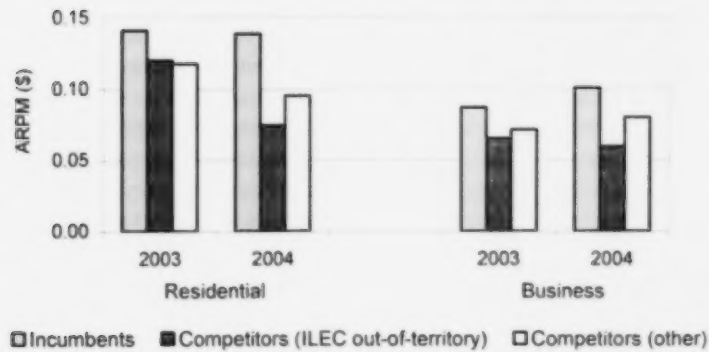


Source: CRTC Data Collection

In the residential long distance market, the average revenue per minute (ARPM) decreased for all service providers. However, in the business long distance segment, the incumbents and competitors (other) realized an increase in ARPM. In 2004, business customers enjoyed price advantages over the residential customer, as the major competitive providers continued to target high volume enterprises and large business customers with lower rate structures. The ARPM for residential and business traffic is illustrated in Figure 4.2.3.

⁴¹ The competitors' (cable) share of long distance revenues was negligible in 2004.

Figure 4.2.3
Retail Average Revenue per Minute (ARPM)



Source: CRTC Data Collection

The higher ARPM for the incumbents can be attributed, among other things, to the incumbents' customers that have not subscribed to a long distance calling plan.

Table 4.2.3 provides the major incumbent telephone companies' retail market shares for 2003 and 2004, measured in terms of retail business and residential long distance revenues, in their traditional operating territories.⁴²

Table 4.2.3
Incumbent Telephone Companies' Long Distance
Retail Revenue Market Share by Region

Region	Percent	
	2003	2004
BC, Alberta	72%	69%
Saskatchewan	82%	84%
Manitoba	76%	84%
Ontario, Quebec	66%	65%
Atlantic	75% #	78%

Source: CRTC Data Collection

⁴² The market share data in Table 4.2.3 excludes the incumbents out-of-territory revenues.

Retail Long Distance - Business Market

Tables 4.2.4 and 4.2.5 display the business long distance revenues and minutes, respectively, for 2003 and 2004. Figure 4.2.4 displays the business long distance revenue market share by service provider.

Business long distance revenues in 2004 remained relatively unchanged at \$1.8 billion. Related traffic declined by 7% from 22.5 billion minutes to 21.1 billion minutes, with the competitors (incl. ILEC out-of-territory) carrying as much traffic as the incumbents. The minimal increase in business revenues in 2004, with a 7% decline in minutes, is reflective of the increase in the ARPM for both the incumbents and the competitors (other). The impact of the service providers' price structure is reflected in the ARPM which increased by 9% in the business market, from 8 cents per minute in 2003 to 9 cents per minute in 2004.

Table 4.2.4
Business Long Distance Revenues
(\$ millions)

	2003	2004	<i>Growth 2003-2004</i>
Incumbents	977	1,067	9.2%
Competitors (ILEC out-of-territory)	62	332	435.6%
Competitors (other)	738	390	-47.1%
Total	1,777	1,790	0.7%

Source: CRTC Data Collection

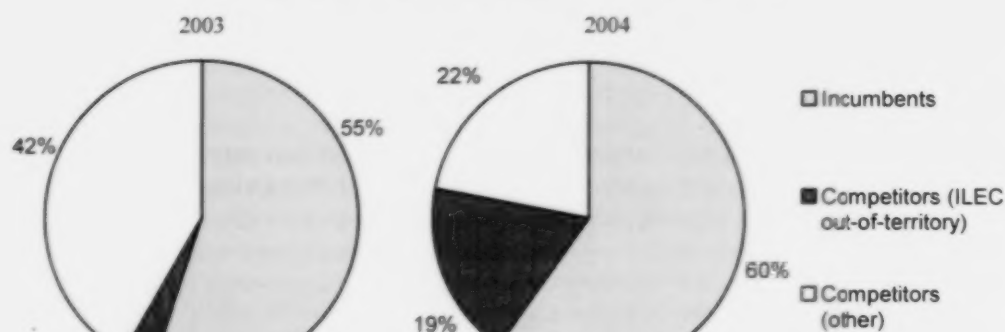
Table 4.2.5
Business Long Distance Minutes
(Millions)

	2003	2004	<i>Growth 2003-2004</i>
Incumbents	11,247	10,585	-5.9%
Competitors (ILEC out-of-territory)	951	5,584	486.9%
Competitors (other)	10,334	4,882	-52.8%
Total	22,532	21,051	-6.6%

Source: CRTC Data Collection

The incumbents' business long distance revenues increased 9.2% in 2004 over 2003, to \$1.1 billion. The competitors' business long distance revenues declined 9.8%, from \$0.8 billion in 2003 to \$0.7 billion in 2004. The large increase for the competitor (ILEC out-of-territory) and decrease for competitor (other) were mainly due to the industry consolidation that took place in 2004 in which Allstream Canada was acquired by MTS (now MTS Allstream) and 360networks was acquired by Bell Canada, as previously discussed in section 4.1 (Financial Review of Markets). With reference to business long distance minutes, the incumbents' minutes declined by 6% to 10.6 billion minutes, while the competitors' minutes declined 7% from 11.3 billion minutes in 2003 to 10.5 billion minutes in 2004. As previously noted, the impact of the service providers' price structure is reflected in the average rate per minute which increased by 16% and 12% for the incumbents and the competitor (other), respectively, and declined by 9% for the competitor (ILEC out-of-territory).

Figure 4.2.4
Business Long Distance Revenue Market Share



Source : CRTC Data Collection

As a result of the increase in business long distance revenues by the incumbents in 2004 and the decline in these revenues by the competitors, the competitor market share declined from 45% in 2003 to 41% in 2004.

Retail Long Distance - Residential Market

Residential long distance revenues in 2004 equalled \$2.9 billion, down 5.1% from the previous year. Residential long distance minutes were up in 2004, increasing 3% from 22.4 billion minutes to 23 billion minutes in 2004. The increase in residential long distance minutes was primarily due to growth in competitor traffic, partly offset by the incumbents' minutes which declined 6% over the same period.

Tables 4.2.6 and 4.2.7 display residential long distance revenues and minutes, respectively, for the years 2003 and 2004.

Table 4.2.6
Residential Long Distance Revenues
(\$ millions)

	2003	2004	<i>Growth 2003-2004</i>
Incumbents	2,300	2,135	-7.2%
Competitors (ILEC out-of-territory)	1	2	221.1%
Competitors (other)	712	721	1.3%
Total	3,012	2,857	-5.1%

Source: CRTC Data Collection

Table 4.2.7
Residential Long Distance Minutes
(Millions)

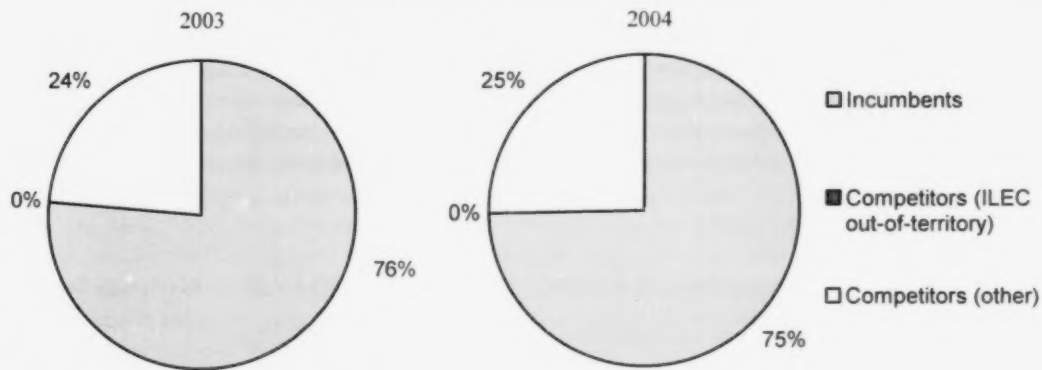
	2003	2004	<i>Growth 2003-2004</i>
Incumbents	16,295	15,383	-5.6%
Competitors (ILEC out-of-territory)	5	26	420.0%
Competitors (other)	6,061	7,592	25.3%
Total	22,361	23,001	2.9%

Source: CRTC Data Collection

The incumbents' residential long distance revenues declined by 7.2% in 2004 over the previous year, to \$2.1 billion, while the competitors' revenues remained relatively unchanged at \$0.7 billion. With reference to residential long distance minutes, the incumbents declined by 5.6% to 15.4 billion minutes, while the competitors' (other) minutes increased by 25.3%, to 7.6 billion minutes. The out-of-territory competitors carried minimal residential minutes as they were focused on business customers.

While residential minutes increased by 3%, this increase was with the competitors, as customers continued to take advantage of their offerings.

Figure 4.2.5
Residential Long Distance Revenue Share



Source: CRTC Data Collection

As a result of the decline in residential long distance revenues by the incumbents and the increase in these revenues by the competitors, the incumbent's revenue market share decreased marginally from 76% in 2003 to 75% in 2004, as displayed in Figure 4.2.5. The competitors (ILEC out-of-territory) had minimal share of the residential long distance market, as these competitors focused on the business long distance market.

Wholesale Long Distance

Wholesale long distance represents services provided by long distance providers to other long distance service providers. These services include connection arrangements between facilities-based carriers to transit and/or terminate traffic on behalf of another provider, excluding originating and terminating traffic on the local network, and the sale of wholesale bulk minutes to resellers of long distance service. In 2004, wholesale long distance revenues accounted for \$0.9 billion, down \$0.2 billion or 18% from 2003.

Table 4.2.8 displays the wholesale long distance revenues for 2003 and 2004. In 2004, the incumbents' wholesale long distance revenues decreased by \$156 million, or 23% and the competitors' long distance revenues declined by \$56 million or 12%. The major increase in revenues for the competitors (ILEC out-of-territory) and decrease for the competitors (other) was due to the industry consolidations in 2004.

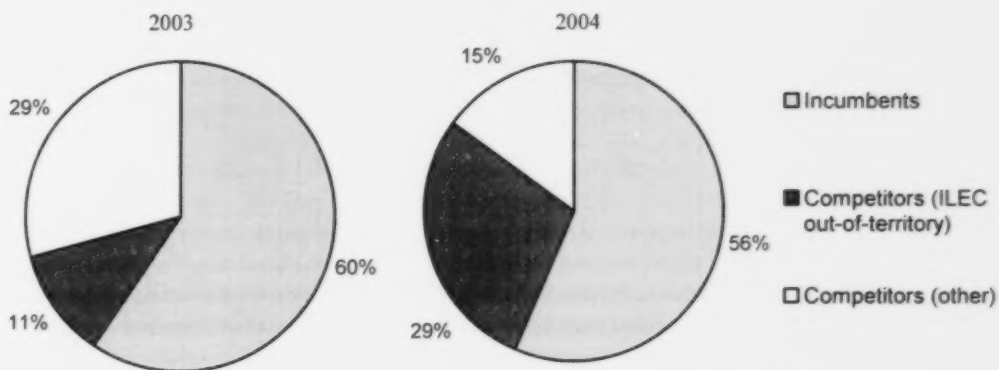
Table 4.2.8
Wholesale Long Distance Revenues
(\$ millions)

	2003	2004	<i>Growth 2003-2004</i>
Incumbents	686	530	-22.8%
Competitors (ILEC out-of-territory)	130	270	107.7%
Competitors (other)	337	141	-58.2%
Total	1,154	941	-18.4%

Source: CRTC Data Collection

With respect to settlement, both incumbents and competitors experienced decreases in settlement related revenues, which declined from \$1.1 billion in 2002, to \$0.4 billion in 2004, a 64%⁴³ decrease. The decreases in settlement revenues can be attributed in part to the continued reductions in settlement rates and reduced reliance on Canadian wholesale providers to complete international calls.

Figure 4.2.6
Wholesale Long Distance Revenue Share



Source: CRTC Data Collection

Figure 4.2.6 displays the wholesale revenue market share for 2003 and 2004 by type of provider. The competitors' share of long distance wholesale revenues increased from 40% in 2003 to 44% in 2004.

⁴³ CRTC Data Collection.

Summary

Overall, wireline long distance revenues continue to decrease annually, primarily due to pricing pressures caused by competition. Incumbent revenues decreased in the residential market segment in 2004 but increased in the business market segment. Competitors, however, lost revenues in the business market segment but gained revenues in the residential market segment. Incumbents and competitors lost long distance wholesale revenues.

Wireline long distance services are being replaced by alternative communication technologies, such as wireless, e-mail, instant messaging and other voice communications services.

For 2004, the long distance landscape experienced significant changes. The growing use of IP networks to transmit long distance traffic, with their lower cost structure, may have a positive impact on the service providers' long distance cost structure. Industry consolidation has also had an impact on the industry. MTS (now MTS Allstream) acquired Allstream Canada, thereby increasing its market share significantly. As well, Call-Net purchased 360networks' eastern customer base from Bell Canada with the option to acquire the eastern assets as well. The bundling of long distance service with services such as local, Internet, mobile, and video/cable by major players will continue to put downward pressure on long distance rates.

4.3 Local and Access

Highlights

- In 2004, local and access revenues, and lines were essentially unchanged at \$9.7 billion and 20.6 million lines, respectively.
- The total number of retail lines was essentially unchanged at 19.8 million lines, of which the competitors held 6.5%, up from 5.2% in 2003.
- The share of retail revenues held by competitors increased by 19.4% to \$548 million, or 6.4% of total retail revenues, up from 5.4% in 2003.

Sector Description

a) Description of Services

Local wireline telephone service is the basis for voice telecommunications services for residences and businesses in Canada. Local service has traditionally been characterized as basic phone service utilizing a telephone set that is wired to a LECs' network that, for a basic monthly fee, provides unlimited access to make calls within a free-calling area. Local service also includes other services such as automated call answering services, business Centrex, Integrated Services Digital Network (ISDN) services, and other user services such as inside wiring, installation and repair, teleconferencing and miscellaneous local services.

Local and access revenues also include the sale of local services on a wholesale basis and since the introduction of local competition, has included access services revenues for interconnection with carriers and other service providers, including switching and aggregation, and unbundled network components.

Contribution revenues, which are received by LECs based on the number of residential lines they provide in high-cost serving areas (HCSAs), are also included in local and access revenues. While contribution revenues are included in the overall segment revenues reported in Table 4.3.1, they are excluded from the remaining tables in the local and access section of this report.

Revenues from the sale of wireline terminal equipment, such as telephone handsets and private branch exchange (PBX) switching equipment, are also excluded from the local and access revenues covered in this report.

b) Markets and Observations for 2004

Table 4.3.1 provides total local and access revenues and lines for the period 2000 to 2004.

**Table 4.3.1
Total Local and Access Revenues and Lines**

	2000	2001	2002	2003	2004	<i>Growth 2003-2004</i>	<i>CAGR 2000-2004</i>
Total local and access revenues (\$ millions)	10,345	11,203	10,003	9,699	9,695	0.0%	-1.6%
Less: contribution revenues (\$ millions)	957	1,002	250	247	240	-2.8%	-29.2%
Local and access service revenues (\$ millions)	9,388	10,021	9,724	9,452	9,455	0.0%	0.2%
Lines (thousands)	20,840	21,126	20,622	20,612	20,610	0.0%	-0.3%

Source: CRTC Data Collection

Total local and access revenues in Table 4.3.1 include local and access monthly rates and service charges, contribution, and local pay telephone services. Local lines in Table 4.3.1 include residential, business and local pay telephone lines, as well as lines provided on a wholesale basis to affiliated companies and third party providers of telecommunications services. All other tables and figures in this section, unless otherwise noted, exclude revenues from contribution as well as pay telephone revenues and lines.

Between 2003 and 2004, total local and access revenues, and lines remained essentially unchanged at \$9.7 billion and 20.6 million lines, respectively.

i) Telephone numbers vs. lines

While the number of retail lines peaked in 2001 (and subsequently commenced a slow decline), the number of in-service central office codes (a proxy for telephone number consumption) continues to increase at an annual rate of approximately 4.5%.⁴⁴ The growth of wireless telephone subscriptions is clearly a major contributor to this divergence as well as any service that requires large quantities of telephone numbers relative to the number of PSTN access lines. Such services may include facsimile mailboxes, unified messaging, third-party switchboard services, and most recently, Internet telephony.

ii) Increasing local competition

While the ability for personal computer users to utilize the Internet for voice communications between personal computers has existed for several years, the use of Internet Protocol for voice communications (VoIP) is increasing on a number of other fronts:

- facilities-based telecommunications service providers are migrating legacy networks to more efficient and cost-effective IP-based backbone networks;

⁴⁴ Canadian Number Administrator - Number Resource Utilization Forecast, www.cna.ca/cocus.htm.

- the commercialization and availability of services, facilitated by the increasing penetration of residential broadband, which allows an Internet user to interconnect with the PSTN, using the standard North American Numbering Plan (Internet telephony); and
- the introduction of residential telephone service by the cable undertakings, utilizing their existing distribution networks (cable telephony).

In 2004 and throughout 2005, numerous industry participants including incumbents, facilities-based competitors, resellers and cable undertakings have introduced retail services that carry voice traffic utilizing VoIP and interconnect with the PSTN. Although local service has been available from participants within each of these service provider categories for some time, the service utilized traditional circuit-switched technology.

Traditional local service includes an access line from the customer to the service provider, connectivity to the PSTN, and a telephone number. VoIP services are capable of reproducing the functionality of traditional local service, offer subscribers numerous call and message-management features, and operate over the Internet or a distinct connection. Internet telephony allows the service provider and the access provider to be independent. As with traditional wireline, cable telephony is "fixed" in nature in that there is a managed access connection between the subscriber and the service provider.

In 2004, VoIP services had essentially no impact on local revenues; however, it is expected that revenues and subscriptions from VoIP services will increase in 2005.

iii) Pay Telephone

After declining for several years, the number of pay telephones in Canada was unchanged in 2004 at approximately 155 thousand lines, almost all of which are provided by the incumbents. In 2004, the incumbents' annual revenues were approximately \$1,250 per pay telephone, down from about \$1,500 in 2003. Incumbents' pay telephone revenues consist of:

- their own pay telephones when consumers place calls;
- per-call compensation received from inter-exchange carriers (IXCs) when consumers dial toll-free numbers not carried by the incumbent; and
- charges to CPTSPs for the local pay telephone line and for call setup.

As the dominant providers of pay telephone service in Canada, the Commission requires that the incumbents:

- inform the Commission when they intend to de-commission the last pay telephone within a community; and
- report on an annual basis, among other things, the number of pay telephones in their operating territories that accept coins and/or allow incoming calling.

Competitors offering pay telephone service must be registered with the Commission. In 2004, there were more than 200 registered CPTSPs, most of which had fewer than five lines.

c) Sector Participants

The large incumbents operate in most areas of the country. In addition to their original operating territories, some incumbents also operate in other regions either directly or through affiliate operations. Small incumbents operate in limited areas of Ontario, Quebec, and B.C., and include both municipally-owned and public- and privately-held carriers. The small incumbents account for 1.8% of all incumbent-provided retail lines in Canada.

There has been a limited amount of competitor penetration in the local and access segment since the introduction of local competition in 1998. Competitors have typically been facilities-based service providers, who own a portion of their PSTN network facilities, or resellers of PSTN services, such as Centrex, purchased from either the incumbent carriers or other facilities-based competitors. Facilities-based competitors also include telecom operations of cable undertakings who deliver services using their own infrastructure. Some ILECs have also expanded outside of their traditional serving territories, providing competition either directly or through affiliate companies. Within this report, these operations are referred to as competitor (ILEC out-of-territory).

Competitors continue to focus on the residential and business markets in larger urban centres, although penetration in these markets continues to be negligible in a number of locations.

Further consolidation occurred during 2004 with MTS Communications Inc. completing its acquisition of Allstream (forming MTS Allstream) in June; and Bell Canada completing its acquisition of 360networks, including the assets of LondonConnect Inc. and GT Group Telecom Services Corp., in November. In preparing this report, revenues and expenses accrued by the acquired entities up to the completion of the respective transactions, have been classified as incumbent for the portion within the incumbents traditional territory and as competitor (ILEC out-of-territory) for portions outside their traditional territory.

d) Regulatory Framework

Local telephone service in the territories of the large ILECs (excluding the territories of SaskTel, Northwestel, Télébec and TCQ) was opened to facilities-based competition in 1998. Local competition is now permitted in the territories of all large ILECs except that of Northwestel. Local services provided by ILECs to consumers as well as the interconnection services provided by all ILECs continue to be regulated by the Commission. Prior to the introduction of local competition, ILECs were subject to a rate-of-return regulatory framework, under which local service prices were set based on a revenue requirement basis using a rate of return approved by the Commission.

With the introduction of competition in local services, price cap regulation replaced rate-of-return regulation. Price cap regulation uses a formula approach to determine the maximum allowable prices for different baskets of services. Price cap regulation is recognized as being more effective than rate-of-return regulation in that ILECs are provided with stronger incentives to minimize costs, operate more efficiently and be more innovative in the provision of services.

e) Regulatory Developments

In Decision CRTC 2004-46,⁴⁵ the Commission modified the regulatory framework for local network interconnection between LECs, which are intended to provide a more efficient and cost-effective means of interconnection. In addition to exchanging traffic on fewer distinct trunk groups, CLECs can now interconnect with an ILEC at fewer locations by utilizing larger local interconnection regions, composed of many exchanges.

In 2004, and continuing in 2005, numerous service providers began offering, or announced their plans related to, VoIP services. In Decision 2005-28,⁴⁶ the Commission set out details of the regulatory regime applicable to the provision of VoIP services including, among other things, the requirement that local VoIP service providers that are not operating as Canadian carriers are to register with the Commission as resellers, and that local VoIP service revenues are contribution-eligible.

Local exchange service is one of the last markets within the telecommunications industry that continues to be regulated. Currently underway is a proceeding, initiated by Public Notice 2005-2,⁴⁷ the intent of which is to establish, among other things, a framework for forbearance from regulation of residential and business local exchange services.

Market Segments

Table 4.3.2 presents a summary of local and access revenues (exclusive of contribution, terminal equipment, and pay telephone revenues) segmented on a residential, business and wholesale basis for the period 2000 to 2004. Table 4.3.3 provides the number of local lines that correspond to these market segments, while Table 4.3.4 provides aggregated residential and business revenues and lines (retail revenues and lines).

Table 4.3.2
Local and Access Revenues by Market Segment
(\$ millions)

	2000	2001	2002	2003	2004	Growth 2003-2004	CAGR 2000-2004
Residential	4,833	5,060	5,140	5,132	5,099	-0.6%	1.3%
Business	3,769	3,946	3,544	3,398	3,402	0.1%	-2.5%
Wholesale	636	740	893	755	822	8.9%	6.6%
Total	9,238	9,746	9,577	9,285	9,323	0.4%	0.2%

Source: CRTC Data Collection

⁴⁵ *Trunking arrangements for the interchange of traffic and the point of interconnection between local exchange carriers*, Telecom Decision CRTC 2004-46, 14 July 2004.

⁴⁶ *Regulatory framework for voice communication services using Internet Protocol*, Telecom Decision CRTC 2005-28, 12 May 2005.

⁴⁷ *Forbearance from regulation of local exchange services*, Telecom Public Notice CRTC 2005-2, 28 April 2005.

Table 4.3.3
Local Lines by Market Segment⁴⁸
(Thousands)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Residential	12,909	12,920	12,913	12,886	12,891	0.0%	0.0%
Business	7,378	7,561	7,024	6,952 #	6,947 #	-0.1%	-1.5%
Wholesale	381	474	521	611	617 #	1.0%	12.8%
Total	20,668	20,955	20,458	20,450 #	20,455	0.0%	-0.3%

Source: CRTC Data Collection

Table 4.3.4
Total Retail Revenues and Lines

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Revenues (\$ millions)	8,602	9,006	8,684	8,530	8,501	-0.3%	-0.3%
Lines (thousands)	20,287	20,481	19,937	19,838	19,838	0.0%	-0.6%

Source: CRTC Data Collection

In 2004, local and access revenues (excluding contribution, terminal equipment and pay telephones) increased by 0.4%. While revenues for the residential segment declined by 0.6%, the business segment revenues were essentially unchanged. The wholesale segment however, experienced revenue growth of 8.9%.

Over the same period, the total number of local lines remained relatively unchanged at just under 20.5 million lines, with the number of retail lines unchanged and the wholesale segment showing a marginal increase in the number of local lines to 0.62 million lines.

a) Local Retail Market

In 2004, retail revenues held by competitors increased by 19.4%⁴⁹ to \$548 million, representing 6.4%⁵⁰ of all retail revenue, up from 5.4% in 2003. With retail lines remaining unchanged, the growth of wholesale revenues and lines confirms that more retail lines were provided by competitors. In 2004, retail lines provided by competitors increased by 24.8% to 1.3 million lines, many of which were provisioned using some component of wholesale services. The correlation between the growth of competitor-provided retail lines and wholesale revenue is discussed in part (d) Local Wholesale Market.

⁴⁸ The data contained in *Release of certain local market data*, Telecom Public Notice CRTC 2005-11, 30 August 2005, has been updated in this table to reflect revised data recently received from companies.

⁴⁹ Source: CRTC Data Collection.

⁵⁰ At the national level, competitors' market share of the retail local revenues in 2004 included 0.3% held by cable service providers.

Table 4.3.5 shows the share of local retail lines held by the incumbents for each province. The incumbents' out-of-territory local operations are not included in the incumbent market share.

Table 4.3.5
Incumbent Local Retail Market Share by Province (lines)

Province	2003	2004
British Columbia	95.3%	94.0%
Alberta	94.2%	92.4%
Saskatchewan	100.0%	100.0%
Manitoba	98.1%	99.6%
Ontario	93.3%	91.9%
Quebec	96.4%	95.4%
New Brunswick	99.7%	99.8%
Nova Scotia	89.0%	85.1%
Prince Edward Island	93.1%	90.7%
Newfoundland and Labrador	97.0%	97.7%

Source: CRTC Data Collection

Table 4.3.6 provides further detail on retail market share, disaggregated by residential and business segments, measured in terms of the number of local lines, for a list of major Canadian centres.

When compared to the provincial results shown in Table 4.3.5, the higher share of local lines held by competitors within most major centres, demonstrates that competitors continue to target the major centres in Canada. Collectively, 90.2%⁵¹ of competitors' retail lines are located within the 21 major centres shown in Table 4.3.6.

⁵¹ Source: CRTC Data Collection.

Table 4.3.6
Market Share (Local Lines) in Major Centres⁵²

Province	City	Business Lines		Residential Lines	
		2003	2004	2003	2004
British Columbia	Vancouver				
	Incumbents	81.5% #	78.1%	96.9%	95.1%
	Competitors (ILEC out-of-territory)	7.5% #	17.0%	0.0%	0.0%
	Competitors (other)	11.0% #	4.9%	3.1%	4.9%
	Victoria				
	Incumbents	90.1% #	90.8%	100.0%	99.5%
Alberta	Edmonton				
	Incumbents	1.6% #	9.1%	0.0%	0.0%
	Competitors (ILEC out-of-territory)	8.3% #	0.1%	0.0%	0.5%
	Calgary				
	Incumbents	84.1%	77.7%	94.9%	93.0%
	Competitors (ILEC out-of-territory)	6.3%	16.5%	0.0%	0.0%
Saskatchewan	Saskatoon				
	Incumbents	99.9%	99.8%	100.0%	100.0%
	Competitors (ILEC out-of-territory)	0.0%	0.2%	0.0%	0.0%
	Competitors (other)	0.1%	0.0%	0.0%	0.0%
	Regina				
	Incumbents	99.9%	99.9%	100.0%	100.0%
Manitoba	Winnipeg				
	Incumbents	92.4%	98.4%	100.0%	100.0%
	Competitors (ILEC out-of-territory)	0.0%	1.5%	0.0%	0.0%
	Competitors (other)	7.6%	0.1%	0.0%	0.0%
Ontario	Toronto				
	Incumbents	81.3%	81.0%	94.0%	91.9%
	Competitors (ILEC out-of-territory)	1.9%	11.1%	0.1%	0.1%
	Competitors (other)	16.8%	8.0%	5.9%	8.1%
	Ottawa-Gatineau				
	Incumbents	91.3%	90.5%	98.4%	96.6%
	Competitors (ILEC out-of-territory)	0.0%	6.1%	0.0%	0.0%
	Competitors (other)	8.7%	3.4%	1.6%	3.4%
	Hamilton				
	Incumbents	85.6%	85.4%	96.8%	94.1%
	Competitors (ILEC out-of-territory)	0.8%	9.4%	0.0%	0.0%
	Competitors (other)	13.6%	5.2%	3.2%	5.9%
	London				
	Incumbents	84.8%	83.7%	96.4%	93.6%
	Competitors (ILEC out-of-territory)	0.0%	10.5%	0.0%	0.0%
	Competitors (other)	15.2%	5.8%	3.6%	6.4%

⁵² Major centre boundaries are defined using Statistics Canada and census agglomeration.

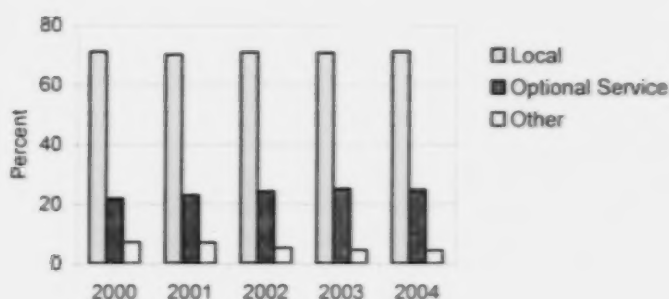
Table 4.3.6
Market Share (Local Lines) in Major Centres (cont'd)

Province	City	Business Lines		Residential Lines	
		2003	2004	2003	2004
Ontario (cont'd)	Kitchener				
	Incumbents	84.2%	83.6%	96.4%	94.2%
	Competitors (ILEC out-of-territory)	0.0%	10.3%	0.0%	0.0%
	Competitors (other)	15.8%	6.1%	3.6%	5.8%
	St. Catharines-Niagara				
	Incumbents	86.1%	87.7%	100.0%	99.9%
	Competitors (ILEC out-of-territory)	0.0%	10.5%	0.0%	0.0%
	Competitors (other)	13.9%	1.8%	0.0%	0.1%
	Windsor				
	Incumbents	83.3%	83.4%	100.0%	100.0%
	Competitors (ILEC out-of-territory)	0.0%	13.1%	0.0%	0.0%
	Competitors (other)	16.7%	3.5%	0.0%	0.0%
	Oshawa				
	Incumbents	88.6%	89.7%	96.6%	93.9%
	Competitors (ILEC out-of-territory)	0.0%	6.8%	0.0%	0.0%
	Competitors (other)	11.4%	3.5%	3.4%	6.1%
Quebec	Montréal				
	Incumbents	87.8%	85.3%	98.3%	95.8%
	Competitors (ILEC out-of-territory)	3.0%	10.9%	0.0%	0.0%
	Competitors (other)	9.3%	3.8%	1.7%	4.2%
	Québec				
	Incumbents	83.8%	83.0%	100.0%	99.9%
New Brunswick	Fredericton				
	Incumbents	99.9%	99.9%	100.0%	100.0%
	Competitors (ILEC out-of-territory)	0.0%	0.1%	0.0%	0.0%
	Competitors (other)	0.1%	0.0%	0.0%	0.0%
Nova Scotia	Halifax				
	Incumbents	89.2% #	85.1% #	80.0% #	72.1%
	Competitors (ILEC out-of-territory)	0.0%	3.6% #	0.0%	0.0%
	Competitors (other)	10.8% #	11.3% #	20.0% #	27.9%
Prince Edward Island	Charlottetown				
	Incumbents	91.4% #	89.2% #	81.8% #	76.0%
	Competitors (ILEC out-of-territory)	0.0%	0.2%	0.0%	0.0%
	Competitors (other)	8.6% #	10.7% #	18.2% #	24.0%
Newfoundland and Labrador	St. John's				
	Incumbents	89.8% #	86.5% #	100.0%	100.0%
	Competitors (ILEC out-of-territory)	0.0%	0.6%	0.0%	0.0%
	Competitors (other)	10.2% #	12.9% #	0.0%	0.0%

b) Local Residential Market

Local residential service is composed of three primary components: basic local service, optional service features, and other non-recurring services such as connection and inside wiring charges. Figure 4.3.1 shows that the distribution of local residential revenues amongst these three components has remained essentially unchanged over the last several years, with basic local service representing 71% of local residential revenues in 2004.

Figure 4.3.1
Local Residential Revenues by Component



Source: CRTC Data Collection

Table 4.3.7 and Table 4.3.8 present local residential revenues and lines, respectively, for the period 2000 to 2004.

Table 4.3.7
Local Residential Revenues
(\$ millions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Incumbents	4,817	5,038	5,082	5,035	4,957	-1.5%	0.7%
Competitors (ILEC out-of-territory)	n/a	n/a	n/a	0	0	n/a	n/a
Competitors (other)	16	22	58	97	142	46.4%	72.6%
Total	4,833	5,060	5,140	5,132	5,099	-0.6%	1.3%

Source: CRTC Data Collection
n/a: not available

In 2004, local residential revenues declined by 0.6% to just under \$5.1 billion, while over the same period, the number of local residential lines was essentially unchanged at 12.9 million lines.

As shown in Table 4.3.7, local residential revenues held by incumbents decreased by 1.5% to just under \$5.0 billion in 2004, while competitors' local residential revenues increased by 46.4% to \$142 million. The share of local residential revenues held by competitors grew to 2.8% in 2004, up from 1.9% in 2003.

Table 4.3.8
Local Residential Lines
(Thousands)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Incumbents	12,864	12,846	12,729	12,627	12,473	-1.2%	-0.8%
Competitors (ILEC out-of-territory)	n/a	n/a	n/a	1	1	n/a	n/a
Competitors (other)	45	74	184	258	418	62.0%	74.6%
Total	13,909	12,920	12,913	12,886	12,891	0.0%	0.0%

Source: CRTC Data Collection

n/a: not available

As shown in Table 4.3.8, the number of local residential lines held by incumbents decreased by 1.2% to just under 12.5 million lines in 2004, while the number of competitors' lines grew by 62% to 0.42 million lines. The share of local residential lines held by competitors increased from 2.0% in 2003 to 3.2% in 2004.

Among the competitors, local residential revenues and lines provided by competitors (ILEC out-of-territory) remained negligible in 2004 as they continued to focus on the business market.

Over the past several years, the number of Canadian households has grown consistently,⁵³ yet the number of residential telephone lines remained almost unchanged in 2004. A number of demographic and technology factors may be contributing to this, including, but not limited to, the growth of wireless subscriptions, the elimination of secondary telephone lines as consumers migrated to broadband Internet, and the growth of retirement communities with shared telephone systems.

⁵³ Canadian Housing Observer, <http://www.cmhc-schl.gc.ca>.

c) **Local Business Market**

Table 4.3.9 and Table 4.3.10 present local business revenues and lines, respectively, for the period 2000 to 2004.

Table 4.3.9
Local Business Revenues
(\$ millions)

	2000	2001	2002	2003	2004	Growth 2003-2004	CAGR 2000-2004
Incumbents	3,619	3,736	3,258	3,036	2,996	-1.3%	-4.6%
Competitors (ILEC out-of-territory)	n/a	n/a	n/a	92	298	223.9%	n/a
Competitors (other)	150	210	286	270	108	-60.0%	-7.9%
Total	3,769	3,946	3,544	3,398	3,402	0.1%	-2.5%

Source: CRTC Data Collection

n/a: not available

In 2004, local business revenues were essentially unchanged at just over \$3.4 billion, while over the same period, the number of local business lines also remained essentially unchanged at 6.9 million lines.

As shown in Table 4.3.9, local business revenues held by the incumbents decreased by 1.3% in 2004 to approximately \$3.0 billion, while over the same period, competitors' revenues increased by 12.2% to just over \$0.4 billion, or 12% of total business revenues.

Table 4.3.10
Local Business Lines⁵⁴
(Thousands)

	2000	2001	2002	2003	2004	Growth 2003-2004	CAGR 2000-2004
Incumbents	6,806	6,970	6,303	6,185	6,086	-1.6%	-2.8%
Competitors (ILEC out-of-territory)	n/a	n/a	119	169	596	252.7%	n/a
Competitors (other)	572	591	602	598	265	-55.7%	-17.5%
Total	7,378	7,561	7,024	6,952	6,947	-0.1%	-1.5%

Source: CRTC Data Collection

n/a: not available

As shown in Table 4.3.10, local business lines held by the incumbents decreased by 1.6% in 2004 to 6.1 million lines, while the number of competitors' business lines increased by 12.3% to approximately 0.9 million lines, or 12.4% of total business lines.

⁵⁴ The data contained in *Release of certain local market data*, Telecom Public Notice CRTC 2005-11, 30 August 2005, has been updated in this table to reflect revised data received from companies. For the year 2004, data was revised to reflect the assignment of lines used by service providers for internal use.

d) Local Wholesale Market

The wholesale market segment includes carrier access services used by LECs for the purposes of interconnecting their respective networks and connecting to their retail customers. Additionally, a service or facility which is subsequently resold by a service provider to their end-customer is included within the local wholesale segment. The major components of wholesale services include:

- interconnection, including switching and aggregation, transit and bill-and-keep trunk settlement;
- unbundled network components such as loops used by competitors to extend services over "the last mile" to their customers; and
- PSTN access, such as ISDN, Centrex and basic local service used by resellers and other competitors to provide local service in exchanges where they do not have facilities.

Table 4.3.11 provides a breakdown of local wholesale revenues by component, for the period 2000 to 2004. In 2004, local wholesale revenues increased by 8.8% to \$822 million, up from \$755 million in 2003. Increases in interconnection, unbundled loop and PSTN access revenues largely contributed to the increase of local wholesale revenues.

Table 4.3.11
Local Wholesale Revenues by Major Component
(\$ millions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Interconnection	248	315	354	287	333	16.0%	7.6%
Centrex resale	84	120	163	134	123	-8.2%	10.0%
PSTN access	148	129	146	128	136	6.6%	-2.0%
Unbundled loops	13	31	53	61	84	37.9%	59.5%
Basic local	38	55	84	89	83	-6.9%	21.5%
Other user charges	105	90	93	56	62	11.3%	-12.2%
Total	636	740	893	755	822	8.8%	6.6%

Source: CRTC Data Collection

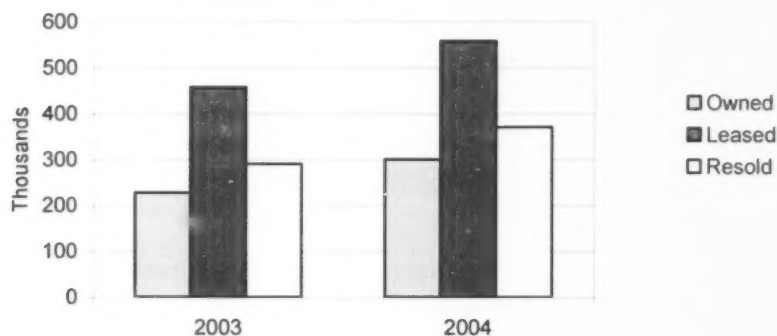
When a competitor cannot reach a retail customer by utilizing self-provisioned facilities, there are two alternatives it can employ:

- leased facilities, such as unbundled loops or loop-equivalent facilities leased from a facilities-based telecommunications provider, and used to connect the retail customer to the competitor's network. As with owned facilities, dial-tone is provided by the competitor's network; or
- resold services, such as Centrex or its equivalents, leased from a LEC and resold to the end-customer without touching the competitor's network.

In 2004, the growth of retail lines held by the competitors is most likely a contributing factor to the increase of unbundled loop and interconnection revenues. While unbundled loop revenues increased due to growth in the number of competitor-provided local lines, also contributing may be competitors who are migrating existing customers, originally provisioned using resold services, onto their own network. Interconnection revenues increased due to the larger volumes of network traffic exchanged between incumbents and competitors.

Figure 4.3.2 illustrates the proportions of competitor retail lines provisioned utilizing either owned (self-provisioned), or leased facilities or resold services.

Figure 4.3.2
Competitor Local Retail Lines by Type of Facility

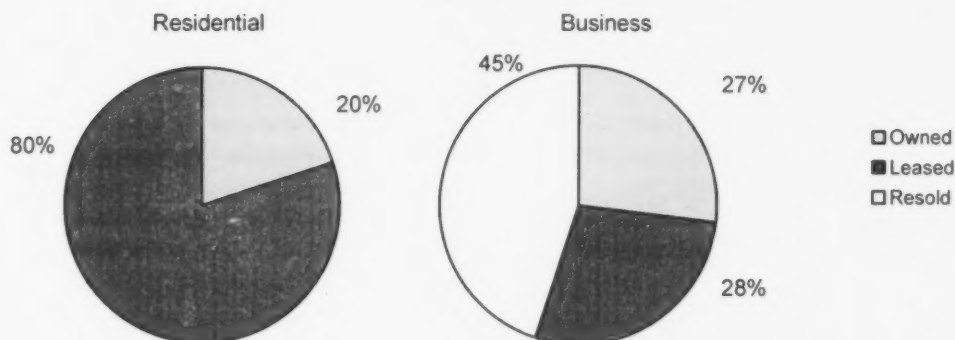


Source: CRTC Data Collection

Among the competitors, the use of leased facilities continued to be the dominant means of provisioning local retail lines, increasing again in 2004. However, within the individual residential and business segments, the distribution of the types of facilities used in the provisioning of local service is dissimilar.

The dominant means that competitors use to provision local residential service is via unbundled local loops leased from the incumbents. In 2004, revenues realized by the incumbents for the supply of local loops increased by 37.9% to \$84 million, driven primarily by the growth of competitor-provided local residential service which, as shown in Table 4.3.8, increased by 160 thousand lines. As shown in Figure 4.3.3, unbundled loops are used for 80% of all competitor-provided residential lines, with self-provisioned lines representing the other 20%.

Figure 4.3.3
Competitor Local Residential and Business Lines
By Type of Facility



Source : CRTC Data Collection

Within the business market, the dominant means that competitors use to provide service is by reselling the lines of a LEC. Almost 45% of the competitors' business lines are provided via resale, with the balance equally split between leased and self-provisioned facilities. Some higher capacity local services, such as ISDN Primary Rate Interface, are used by business customers. For these services, when a competitor is unable to provision by using their own facilities, it may lease digital accesses from a LEC. Revenues realized for digital access services are captured under private line services.

As reported in Table 4.3.12, local wholesale revenues held by the incumbents increased by 15.4% to \$712 million in 2004, while competitors' revenues declined by 20.3% to \$110 million.

Table 4.3.12
Local Wholesale Revenues
(\$ millions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Incumbents	608	713	836	617 #	712	15.4%	4.0%
Competitors (ILEC out-of-territory)	n/a	n/a	n/a	70 #	93	32.9%	n/a
Competitors (other)	28	27	57	68	17	-75.0%	-11.7%
Total	636	740	893	755	822	8.9%	6.6%

Source: CRTC Data Collection

n/a: not available

Over the same period, as shown in Table 4.3.13, local wholesale lines held by the incumbents increased by 11.3% to 454 thousand lines, while the number of competitors' lines decreased by 19.7% to 163 thousand lines. The incumbents remain the dominant supplier of local wholesale services.

Unlike the retail market, the composition of providers within the wholesale services market was affected by the Bell Canada acquisition of 360networks in that the operations of two affiliated companies GT Group Telecom and LondonConnect were essentially consolidated, thereby eliminating a supplier of wholesale services.

Table 4.3.13
Local Wholesale Lines
(Thousands)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Incumbents	289	368	376	408	465	14.0%	12.6%
Competitors (ILEC out-of-territory)	n/a	n/a	43	11	129	1072.7%	n/a
Competitors (other)	92	106	102	192	34	-82.3%	-22.0%
Total	381	474	521	611	628	2.8%	13.3%

Source: CRTC Data Collection
n/a: not available

Summary

In 2004, total local and access revenues remained essentially unchanged at \$9.7 billion. Similarly, local and access lines were also essentially unchanged at 20.6 million lines. Exclusive of revenues from contribution, wholesale services and the sale of terminal equipment, retail revenues decreased by 0.3% to \$8.5 billion, while retail lines were unchanged at 19.8 million lines.

In 2004, local retail revenues held by competitors increased by 19.4% to \$548 million, representing 6.4% of all retail revenue, up from 5.4% in 2003. Local retail lines, held by competitors, increased by 19.3% to 1.3 million lines, or 6.5% of all retail lines. This increase contributed to the growth of total wholesale revenues from sales of components competitors use to interconnect with the incumbents, and their customers.

The incumbents continue to hold the vast majority of both residential and business segment revenues and lines. Although the competitors are making line-share gains in certain major urban centres, in other centres competition remains almost non-existent. In 2004, the majority of new retail lines provided by competitors came from the residential segment, almost none of which were provided by the competitors (ILEC out-of-territory), which continue to focus primarily on the business segment.

The dominant means that competitors use to provision local lines differs between the residential and business segments. While unbundled loops or equivalent, leased from a LEC, are used for 80% of competitor-provided residential lines, the dominant method that competitors use to provide service in the business segment is through the resale of business lines, such as Centrex, also provided by a LEC.

In 2004 and throughout 2005, numerous service providers including incumbents, facilities-based competitors, resellers and cable undertakings have introduced retail voice services which interconnect with the PSTN and use Internet Protocol. These VoIP services are capable of reproducing the functionality of traditional telephone service and can provide users with numerous call and message-management features. In 2004, VoIP services had essentially no impact on local revenues; however, it is expected that revenues and subscriptions from VoIP services will increase in 2005.

4.4 Internet Services

Highlights

- Internet revenues increased 12.9% from \$3.7 billion in 2003 to \$4.2 billion in 2004, making it one of the fastest growing segments of the Canadian telecommunications services industry.
- Retail Internet access revenues reached \$3.3 billion in 2004, increasing 10.3% from \$3.0 billion in the previous year.
- The number of households with residential Internet access subscriptions reached 7.4 million in 2004, representing 59% of all Canadian households. The number of households with high-speed Internet access reached 5.4 million households or 43% of all Canadian households, up from 36% in the previous year.
- Dial-up subscriptions continued to decrease. The number of dial-up subscriptions declined 20%. As a percent of total subscriptions, dial-up subscriptions declined from 36% of total subscriptions in 2003 to 27% in 2004.

Sector Description

a) Description of Services

Internet-related telecommunications services can be divided into three broad market segments: Internet access, Internet transport and Internet applications.

Internet access is the provision of an IP connection to an end-user which allows the end-user to exchange applications traffic with Internet hosts and other end-users. Internet access service consists of three distinct components:

- a physical access line, such as a twisted-pair or coaxial copper cable, a fibre optic cable, or over-the-air spectrum;
- a low- or higher-speed data link, to move information between the end-user's modem or switch and the Internet service provider's (ISP's) facilities; and
- an IP connection established between a computer or similar device behind the end-user's modem and the ISP's facilities.

Internet access services are provisioned at a variety of speeds. Low-speed, or narrowband access services, operate at speeds of up to 64 kilobits per second (Kbps), and are typically provided over dial-up access lines. High-speed access services, including wideband (up to 1.5 Mbps) and broadband (faster than 1.5 Mbps), are for the most part delivered over digital subscriber lines (DSL), coaxial cable and, particularly to businesses, fibre optic cables. Satellite and terrestrial wireless technologies are also used to provide high-speed access services.

Internet transport service is the provision of Internet connectivity to ISPs. Internet transport capacity is provided over Internet backbone facilities that carry aggregated traffic across domestic and international intercity links between Internet traffic switches or routers. In some cases, peering arrangements between Internet backbone service providers substitute for the outright purchase of Internet transport by one ISP from another. Consequently, separate accounting of all Internet transport services is not available.

Internet applications include a growing number of services which piggyback on the Internet connectivity services. They include e-mail, Web surfing and hosting, and instant messaging, among others. Typically, many of the application services are bundled together with Internet access services. However, ISPs and other telecommunications companies do participate in emerging stand-alone business Internet applications markets which include services such as premium Web hosting, Internet data centres and off-site data storage, security and firewall services, among others.

b) Markets and Observations for 2004

Internet-related telecommunications revenues in Canada were \$4.2 billion in 2004, representing an increase of almost 13% over the previous year. As shown in Table 4.4.1, retail Internet access services accounted for the vast majority of these revenues.⁵⁵ The annual growth, however, in retail access revenues has been declining from 54.7% in 2001 to 10.3% in 2004.

Table 4.4.1
Internet Revenues⁵⁶
(\$ millions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Retail Internet access services	1,293	2,000	2,537	3,004 #	3,314	10.3%	26.5%
Internet transport, applications & other	459	660	748	685 #	851	24.2%	16.7%
Total Internet revenues	1,752	2,660	3,285	3,689	4,165	12.9%	24.2%

Source: CRTC Data Collection

c) Sector Participants

There are four principal groups of participants providing retail Internet access and transport services in Canada:

⁵⁵ This category includes wholesale Internet access services, Internet transport and retail and wholesale Internet applications services and equipment, Internet access/transport equipment and ancillary services.

⁵⁶ The Internet transport, applications and other related revenues reported in this Table exclude peer-to-peer agreements where there is no financial compensation. In these arrangements, the carriers exchange similar volumes of traffic. They simply reflect the revenues reported by telecommunications service providers participating in the Commission's data collection process. Consequently, this section focuses primarily on retail Internet access, which makes up the majority of the collected data on Internet-related revenues.

- Incumbent local exchange carriers (incumbents), who own the vast majority of the copper twisted pair access links to homes and businesses. These entities provide Internet access mainly by dial-up, DSL, fibre and/or satellite, although some fixed wireless is utilized in certain places.
- Cable distribution undertakings, who own the coaxial-based television distribution networks serving homes and, to a lesser extent, businesses. These companies mainly provide access by cable modem or by fibre.
- Competitive facilities-based telecommunications service providers, which provide service via dial-up, DSL, fibre and/or satellite. An increasing trend in this group is the presence of ISPs who utilize unlicensed wireless in rural areas.
- Non facilities-based ISPs such as AOL Canada, Cybersurf Inc., Inter.net Canada and Uniserve focus primarily on the provision of Internet access services. These companies tend to utilize the wholesale DSL data services of the incumbents, although there is increasing use of cable Third Party Internet Access (TPIA).

In addition, Telesat Canada (Telesat) offers wholesale satellite services to ISPs in order to serve their end-users. In 2004, Telesat launched the Anik F2 satellite, and in 2005 is providing wholesale satellite services to ISPs for purposes of providing end-user access to the Internet via the Anik F2 satellite. In addition to Internet access services, some facilities-based service providers, including the incumbents, cable distribution undertakings and competitors, also provide Internet transport services.

ISPs are categorized based on the description of participants in section 3. The telephone companies' activities within their traditional territories are categorized as incumbent and their out-of-territory activities are categorized as competitor (ILEC out-of-territory). Although the cable undertakings are incumbents with respect to their cable distribution activities, they are categorized as competitor (cable). The remaining entities are referred to competitor (other).

d) Regulatory Framework

In 1999, in its consideration of how to regulate new media,⁵⁷ the Commission found that while some Internet applications fell under the *Broadcasting Act*, they did not warrant regulation. While both low-speed and high-speed retail Internet access services have been forborne from regulation under the Act, the Commission regulates the provision of wholesale Internet access services. In the case of the incumbents, the underlying facilities and services required by third-party DSL Internet access service providers are subject to price regulation and generally fall within the Competitor Services basket of services under the current price cap regime. Cable companies have also been required to provide third-party access, known as TPIA, to their underlying facilities.

⁵⁷ *New Media*, Telecom Public Notice CRTC 99-14, Broadcasting Public Notice CRTC 1999-84, 17 May 1999.

e) Regulatory Developments in the Past Year

In Decision 2004-34,⁵⁸ the Commission directed Bell Canada, Aliant Telecom Inc., SaskTel and TCI to extend, upon request, DSL Internet service to CLEC business customers thereby allowing these customers to be served by the independent ISPs.

In Decision 2004-37,⁵⁹ the Commission introduced guidelines for the use and testing of cable modems used by ISPs to provide Internet access service over cable networks.

In Decision 2004-69,⁶⁰ the Commission approved tariffs and agreements setting out the rates, terms and conditions for third party Internet access (TPIA) to allow Internet service providers to connect with and serve customers over the cable networks of the major cable companies, namely, Cogeco Cable Canada Inc., Rogers Communications Inc., Shaw Communications Inc., and Vidéotron ltée. The rates were approved on an interim basis pending further consideration of the level of mark-up over costs appropriate for TPIA services and facilities provided by the cable companies.

In Order 2005-62,⁶¹ the Commission gave approval to an application by Bell Canada to provide Gateway Access Service and High Speed Access Service on a wholesale basis as part of its General Tariff. These services provide ISPs with the ability to reach customers utilising Bell Canada's ADSL high speed infrastructure. These services were provided on an interim basis by Bell Canada, and previously, on a non-tariffed basis by BCE Nexxia.

In Order 2005-144,⁶² the Commission granted interim approval to Bell Canada's application to remove the requirement in its General Tariff on Gateway Access Service (GAS) that an end-customer must subscribe to a primary exchange service (PES). This configuration, often termed "naked DSL," permits an ISP to provide high speed Internet service utilising DSL facilities without the need for the end-user to subscribe to local telephone service.

Market Segments

Table 4.4.2 provides a market segment breakdown of revenues for the retail Internet access service market. Since 2002, residential Internet access revenues have accounted for over three quarters of the retail market.

⁵⁸ *FCI Broadband Request to lift restrictions on the provision of retail digital subscriber line Internet services to business customers*, Telecom Decision CRTC 2004-34, 21 May 2004.

⁵⁹ *Cable modems for third-party Internet access*, Telecom Decision CRTC 2004-37, 4 June 2004.

⁶⁰ *Point of interconnection and service charge rates, terms and conditions for third party Internet access using cable networks*, Telecom Decision CRTC 2004-69, 2 November 2004.

⁶¹ *Gateway Access Service and High Speed Access Service*, Telecom Order CRTC 2005-62, 17 February 2005.

⁶² *Gateway Access Service*, Telecom Order CRTC 2005-144, 15 April 2005.

The annual growth rate for residential Internet access revenues has consistently declined since 2001, from a 50% growth rate to 10.7% in 2004. Similarly, the annual growth rate for business Internet access revenues has also consistently declined but at a faster pace, declining from 69% in 2001 to 9.1% in 2004. When compared to the growth rate in 2003, business Internet access revenue growth rate has declined by 13 percentage points, versus about 7 percentage points for residential.

Nevertheless, the average annual growth rate for both segments combined was 27% over the period 2000 to 2004, making the retail Internet access service market one of the fastest growing segments in the telecommunications industry.

Table 4.4.2
Residential and Business Internet Access Service Revenues
(\$ millions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Residential	974.7	1,461.9	1,943.0	2,279.5	2,523.6	10.7%	26.9%
<i>Market Share</i>	75.4%	73.1%	76.6%	75.9%	76.1%		
Business	318.5	537.6	593.8	724.5 #	790.4	9.1%	25.5%
<i>Market Share</i>	24.6%	26.9%	23.4%	24.1%	23.9%		
Total revenues	1,293.2	1,999.5	2,536.8	3,004.0 #	3,314.0	10.3%	26.5%

Source: CRTC Data Collection

Table 4.4.3 provides a breakdown of retail Internet access revenues by market participant categories. These figures show that the incumbents and the competitor (cable) companies are the dominant players with revenue market shares of 43% and 39%, respectively, in 2004, up from 41% and 37%, respectively in 2003. The decline in the market share of the Competitor (Other), from 21% to 15%, may be attributed to in large part to the acquisitions of Allstream Canada by MTS and 360networks by Bell Canada in 2004. These acquisitions resulted in the reclassification of Allstream Canada's operations outside the operating territory of MTS from competitor (other) to competitor (ILEC out-of-territory) and its operations within the operating territory of MTS as incumbent. In the case of 360networks, its western operations were reclassified from competitor (other) to competitor (ILEC out-of-territory) and its eastern operations remained as competitor (other) as these were acquired by Call-Net Enterprises Inc. (now Rogers Holdings).

Table 4.4.3
Internet Access Service Revenues by Market Participant Group
(\$ millions)

	2003	2004	Growth 2003-2004
Incumbents	1,218.9 #	1,431.6	17.4%
Market Share	40.6%	43.2%	
Competitors (cable)	1,108.2	1,284.6	15.9%
Market Share	36.9%	38.8%	
Competitors (ILEC out-of-territory)	35.1	102.1	191.1%
Market Share	1.2%	3.1%	
Competitors (other)	641.8 #	495.7	-22.8%
Market Share	21.4%	15.0%	
Competitors	1,785.1 #	1,882.4	5.5%
Market Share	59.4%	56.8%	
Total	3,004.0 #	3,314.0	10.3%

Source: CRTC Data Collection

As displayed in Table 4.4.4, the four largest Internet access service providers⁶³ continue to not only dominate the market, but to steadily increase their market share of the Internet market, growing from 39% in 2000 to 59% in 2004.

Table 4.4.4
Top Four Retail Internet Companies' Revenues
(\$ millions)

	2000	2001	2002	2003	2004	Growth 2003-2004	CAGR 2000-2004
Four largest companies	505.7	875.3	1,289.9	1,641.0 #	1,956.4	19.2%	40.2%
Market Share	39.1%	43.8%	50.8%	54.6%	59.0%		
Others	787.4	1,124.2	1,246.9	1,363.0 #	1,357.6	-0.4%	14.6%
Market Share	60.9%	56.2%	49.2%	45.4%	41.0%		
Total	1,293.1	1,999.5	2,536.8	3,004.0 #	3,314.0	10.3%	26.5%

Source: CRTC Data Collection

As reflected in Table 4.4.5, competitors' (other) market share declined in the business segment of the retail Internet access market, declining from 42% to 31% in 2004. As previously described, this decline was mainly due to the industry consolidation activities in 2004.

The competitors (other) had the biggest share (31%) of the business Internet segment in terms of revenues after the incumbents who had 49%. The competitors (ILEC out-of-territory) and the competitors (cable) had 12% and 8% of these revenues respectively in 2004.

⁶³ The four largest companies are Bell Canada, TCI, RWI and Shaw.

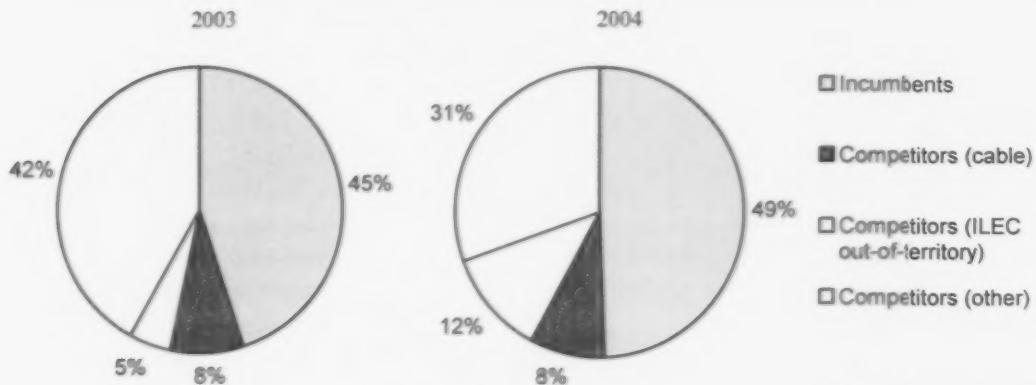
Table 4.4.5
Business Internet Access Revenues by Market Participant
(\$ millions)

	2003	2004	Growth 2003-2004
Incumbents	326.9 #	389.8	19.2%
Market Share	45.1%	49.3%	
Competitors (cable)	58.9	66.1	12.2%
Market Share	8.1%	8.4%	
Competitors (ILEC out-of-territory)	35.1	93.1	165.5%
Market Share	4.8%	11.8%	
Competitors (other)	303.6 #	241.4	-20.5%
Market Share	41.9%	30.5%	
Competitors	397.6 #	400.6	0.8%
Market Share	54.9%	50.7%	
Total	724.5 #	790.4	9.1%

Source: CRTC Data Collection

Figure 4.4.1 displays the shift in participant market share for the business segment of the Internet access market.

Figure 4.4.1
Business Internet Access Revenues Market Share by Market Participant



Source: CRTC Data Collection

The residential Internet access revenues were approximately 3.2 times the size of business revenues. Table 4.4.6 displays residential Internet access revenues by market participant for the period 2000 to 2004. Incumbents have minimal out-of-territory operations with respect to the residential Internet access market. As displayed in Table 4.4.6 and Figure 4.4.2, competitors (other) have been losing market share to the incumbents and cable companies, and, unlike the business Internet access market, the incumbents and the competitors (cable) had approximately 90% of the residential Internet access revenues in 2004.

Table 4.4.6
Residential Internet Access Revenues by Market Participant
(\$ millions)

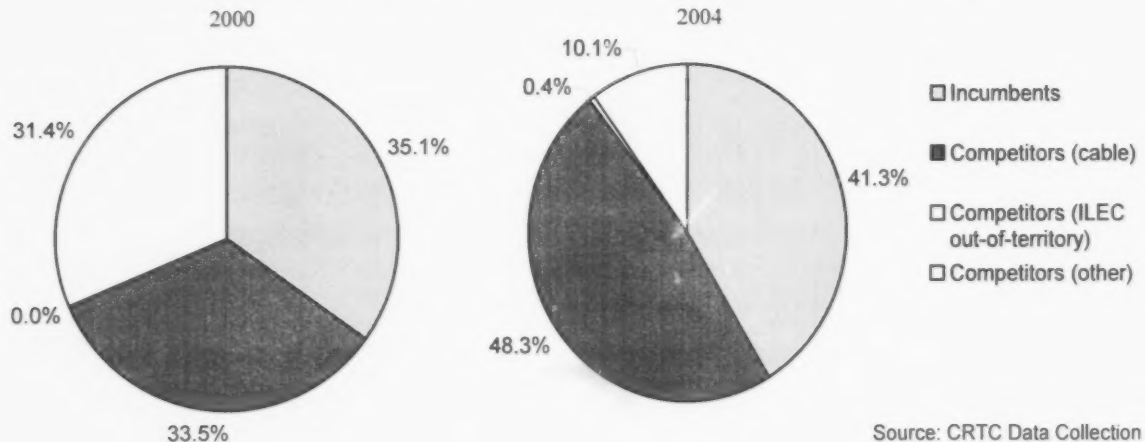
	2000	2001	2002	2003	2004	<i>Growth 2003-2004</i>	<i>CAGR 2000-2004</i>
Incumbent	342.3	551.5	780.0	892.0	1,041.8	16.8%	32.1%
Market Share	33.1%	37.7%	40.1%	39.1%	41.3%		
Competitors (cable)	326.1	570.8	846.2	1,049.3	1,218.5	16.1%	39.0%
Market Share	33.5%	39.0%	43.6%	46.0%	48.3%		
Competitors (ILEC out-of-territory)	-	-	-	-	9.0		
Market Share					0.4%		
Competitors (other)	306.3	339.6	316.9	338.2	254.3	-24.8%	-4.5%
Market Share	31.4%	23.2%	16.3%	14.8%	10.1%		
Competitors	632.4	910.4	1,163.0	1,387.5	1,481.8	6.8%	23.7%
Market Share	64.9%	62.3%	59.9%	60.9%	58.7%		
Total	974.7	1,461.9	1,943.0	2,279.5	2,523.6	10.7%	26.8%

Source: CRTC Data Collection

The decline in the competitors' (other) residential market share is largely explained by the fact that these competitors have very little share of the growing residential high-speed access market as displayed in Table 4.4.8. Table 4.4.8 indicates that competitors (other), over the 2000 to 2004 period, had between 1% and 4% of the high-speed Internet subscribers.

Figure 4.4.2 displays the revenue shift in participant market share for the residential segment of the Internet access market for 2000 and 2004.

Figure 4.4.2
Residential Internet Access Revenues Market Share by Market Participant



Source: CRTC Data Collection

Table 4.4.7
Residential and Business Internet Access Revenues and
Revenue Market Share by Access Technology
(\$ millions)

	2003					2004					Growth 2003-2004	
	Revenue (millions)	Participant Market Share			Access Mode Share	Revenue (millions)	Participant Market Share			Access Mode Share		
		Incumbent	Competitor (Cable)	Competitor (ILEC Out-of-Territory)			Competitor (Other)	Incumbent	Competitor (Cable)			Competitor (ILEC Out-of-Territory)
Dial-Up												
Residential Business	561	44%	2%	0%	54%	433	53%	1%	2%	44%	17%	-22.8%
Retail	121	46%	0%	17%	37%	126	42%	1%	7%	51%	16%	4.0%
Business share	682	45%	1%	3%	51%	559	50%	1%	3%	45%	17%	-18.0%
	18%					23%						
DSL												
Residential Business	668	95%	0%	0%	5%	845	95%	0%	0%	5%	33%	26.6%
Retail	288 #	59%	0%	2%	39%	287	74%	0%	6%	19%	36%	-0.1%
Business share	955	85%	0%	0%	15%	1,133	90%	0%	2%	8%	34%	18.6%
	30%					25%						
Cable												
Residential Business	1,045	0%	99%	0%	0%	1,226	0%	99%	0%	1%	49%	17.3%
Retail	44	0%	100%	0%	0%	58	1%	99%	0%	0%	7%	31.6%
Business share	1,089	0%	99%	0%	0%	1,284	0%	99%	0%	1%	39%	17.9%
	4%					5%						
Other												
Residential Business	6	47%	0%	0%	53%	19	12%	0%	0%	88%	1%	229.3%
Retail	272 #	37%	5%	3%	54%	319	39%	2%	21%	39%	40%	17.5%
Business share	278	37%	5%	3%	54%	338	37%	2%	19%	42%	10%	21.9%
	98%					94%						
Total												
Residential Business	2,279	39%	46%	0%	15%	2,524	41%	48%	0%	10%	100%	10.7%
Retail	725 #	45%	8%	5%	42%	790	49%	8%	12%	31%	100%	9.1%
Business share	3,004	41%	37%	1%	21%	3,314	43%	39%	3%	15%	100%	10.3%
	24%					24%						

Source: CRTC Data Collection

Notes:

- (a) Access Mode Share shows access mode's share of total revenues in same category.
(b) Access Mode Share for residential dial-up, for example, shows residential dial-up's share of total residential revenues.
(c) Other includes the remaining technologies such as, but not limited to, ISDN, Fibre, Fixed Wireless and Satellite.

Types and Sources of Facilities and Services Used by Competitors

Table 4.4.7 displays the residential and business Internet access revenues by access technology for 2003 and 2004. There is a shift in technology from dial-up facilities to high-speed in the form of DSL and cable modem. The percent of revenues in the Other category related to fibre has increased from approximately 79% in 2003 to 81% in 2004.⁶⁴

Competitive ISPs rely predominately on incumbent facilities and services and to a much lesser extent on cable company TPIA services to provide Internet connectivity to end-users. In some cases, in addition to the incumbents, competitive ISPs also rely on other competitive telecommunications providers for Internet access and transport facilities such as satellite.

Another growing access method is fixed wireless, utilizing unlicensed radio spectrum.

Incumbents are increasingly providing high speed Internet services outside of their incumbent territory by utilizing the same services utilized by other competitive ISPs. This applies to both large and small incumbents.

To date, as displayed in Tables 4.4.7 and 4.4.8, competitors have made little headway in the residential segment of the high-speed Internet access market by making use of incumbent facilities and services, as indicated by the relatively small share they hold of that market (i.e., roughly 5% in the case of DSL and a negligible amount in the case of cable).

Internet Subscribers

The number of Internet access connections is generally measured on the basis of the number of end-user subscriptions. This, however, is not the case with business Internet access subscriptions which support multiple users. Consequently, the following data on subscriptions focuses solely on the residential segment of the market.

As Table 4.4.8 indicates, as of year-end 2004, there were 7.4 million residential Internet access subscriptions, or 59% of all Canadian households. Households with high-speed Internet access reached 5.4 million households, or 43% of all Canadian households, up from 36% in the previous year.

This Table also shows a change in residential high-speed and dial-up Internet access subscriptions from 2000 to 2004. These figures illustrate the shift from dial-up Internet access to high-speed since 2000. In 2000, the vast majority of Internet access was by dial-up access (69%). Four years later, in 2004, dial-up access was 27% of all residential Internet subscriptions. High-speed access is now the dominant means of accessing the Internet, comprising 73% of all residential Internet subscriptions.

⁶⁴ CRTC data collection.

As further displayed in Table 4.4.8, during the period 2000 to 2004, the number of dial-up subscriptions declined from 3 million subscriptions to 2 million, an average annual decline of 19%. Since 2000, the competitors have had a roughly stable share of a declining dial-up market. In 2000, competitors had 56% of dial-up subscriptions, compared to 50% in 2004.

A contributing factor to the decline in dial-up subscriptions is the introduction of "high-speed Lite" in 2002, by DSL and cable Internet access service providers, further defining the niche characteristics of Internet dial-up service. High-speed Lite service provides always-on connections at slower transmission speeds (e.g., in the range of 128 Kbps) to the Internet. In Table 4.4.8, this service is included in the high-speed category.

High-speed Internet subscriptions increased 41% annually over the 2000 to 2004 period. DSL continued to narrow the gap with cable modem subscriptions. In 2000, cable modem subscriptions were approximately 2.3 times that of DSL or approximately 42 DSL subscriptions per 100 cable modem subscriptions. Cable modem subscriptions decreased from 1.3 times as many DSL subscriptions in 2003 to 1.2 in 2004, or roughly 82 DSL subscriptions per 100 cable modem subscriptions, up from 77 in 2003.

The above shift in the technology mix in the residential Internet access market is displayed in Figure 4.4.3 by comparing the technology mix in 2000 to that in 2004.

Figure 4.4.3
Residential Internet Access Technology Mix (2000 v. 2004)

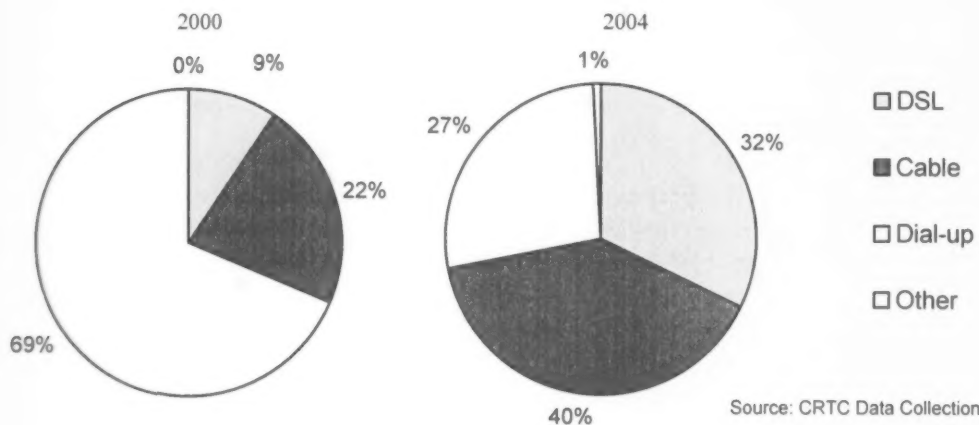


Table 4.4.8
Residential Internet Subscribers by Market Participant

	2000	2001	2002	2003	2004	Growth 2003-2004	CAGR 2000-2004
	Subscribers /1000	Subscribers /1000	Subscribers /1000	Subscribers /1000	Subscribers /1000		
Incumbents							
Dial-up	1,318	1,524	1,392	1,123	1,010	-10.1%	-6.5%
High Speed	398	903	1,400	1,859	2,268	22.0%	54.5%
Total	1,716	2,427	2,792	2,982	3,277	9.9%	17.6%
Competitors (cable)							
Dial-up	74	65	70	44	38	-12.6%	-15.2%
High Speed	943	1,624	2,055	2,532	2,933	15.8%	32.8%
Total	1,018	1,689	2,125	2,576	2,971	15.3%	30.7%
Competitors (ILEC out-of-territory)							
Dial-up					25		
High Speed					0		
Total					25		
Competitors (other)							
Dial-up	1,576	1,560	1,558	1,333	952	-28.6%	-11.8%
High Speed	14	31	71	122	216	76.9%	98.2%
Total	1,590	1,591	1,629	1,455	1,168	-19.7%	-7.4%
Competitors							
Dial-up	1,650	1,625	1,628	1,377	1,016	-26.2%	-11.4%
High Speed	957	1,655	2,126	2,654	3,149	18.6%	34.7%
Total	2,608	3,280	3,754	4,031	4,165	3.3%	12.4%
Total							
Dial-up	2,969	3,149	3,020	2,500	2,025	-19.0%	-9.1%
High Speed	1,355	2,558	3,527	4,513	5,416	20.0%	41.4%
Total	4,324	5,706	6,547	7,013	7,442	6.1%	14.5%

* Percentages refer to access mode's proportion of all residential Internet subscriptions of its type, except for the total rows, where they are a proportion of total industry residential subscriptions.

Source: CRTC Data Collection

Summary

In 2004, Internet service revenues reached \$4.2 billion, increasing approximately 12.9% over the previous year, making it one of the fastest growing segments of the Canadian telecommunications industry. Retail Internet access services account for 80% of the Internet market.

The largest service category, retail Internet access, increased very quickly in recent years, increasing at an average annual rate of 27% between 2000 and 2004. The residential segment made up roughly three-quarters of the market. The cable companies' and the incumbents' share of virtually all major segments of the market grew and, in the case of residential high-speed services, accounted for virtually the entire market. Competitors (other) retail market share declined in both the residential and business segments, declining from 15% in the previous year to 10% in 2004 in the residential segment, and from 42% to 31% in the business segment. The market share of the four largest companies continued to increase, from 55% in 2003 to 59% in 2004.

As of year-end 2004, 7.4 million subscribers, or 59% of all Canadian households, had Internet access subscriptions, an increase of 6% over the previous year.

4.5 Wireless

Highlights

- In 2004, the wireless industry experienced a growth rate of 17.6% in revenues and 13% in the number of wireless subscribers.
- After exhibiting declining growth rates in 2002 and 2003, the growth in the number of subscribers increased from 10.8% in 2003 with 13.3 million subscribers to 13% in 2004 with approximately 15 million subscribers.
- There was consolidation in the industry with RWI acquiring Microcell.
- The average revenue per subscriber (ARPU) increased from \$49 per month in 2003 to \$52 per month in 2004.

Sector Description

a) *Description of Services*

The wireless market segment encompasses telecommunications services provided via wireless access facilities. These services include mobile telephone (including fixed wireless), mobile data such as text messaging, wireless Internet access and paging services. While satellite private line services are included in the data and private line section of this report, satellite services as they relate to mobile telephone are included in this section.

In addition to voice communication, innovations have brought about new technologies and applications in wireless which are increasingly being used to send text messages from one wireless subscriber to another, as well as multi-media messages which include photos, graphics, video and audio clips. In keeping with these developments, wireless operators have implemented inter-carrier text messaging which has been in place for the last few years. In addition, the reach of picture and video messaging services was expanded when the wireless carriers introduced full inter-carrier multi-media messaging on 1 July 2005.⁶⁵

b) *Markets and Observations*

Wireless revenues continued to grow in 2004. The introduction of new services and applications, targeted pricing plans, improved handsets, as well as innovative service bundles have contributed to the increases in wireless revenues and subscribers. Table 4.5.1 displays the wireless revenues for the period 2000 to 2004.

⁶⁵ CWTA Press Release, 29 June 2005.

Table 4.5.1
Wireless Revenues
(\$ millions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Basic voice	3,994.5	4,758.4	5,399.9	6,315.5	7,214.4	14.2%	15.9%
Long distance	459.4	494.3	517.7	572.6	664.9	16.1%	9.7%
Paging	240.9	232.0	166.4	131.4	103.3	-21.4%	-19.1%
Data and other	364.5	416.9	617.4	549.3	941.4	71.4%	26.8%
Terminal	513.7	521.3	389.6	467.9	528.1	12.9%	0.7%
Total	5,573.0	6,422.9	7,091.0	8,036.7	9,452.1	17.6%	14.1%

Source: CRTC Data Collection

In 2004, the wireless sector had revenues of approximately \$9.5 billion, a 17.6% increase over the previous year, and approximately 15 million subscribers, representing a 12.9% increase over the previous year.

c) Sector Participants

Industry participants include three national entities (the Bell Group,⁶⁶ TCI and RWI), regional wireless carriers, small incumbents and resellers of wireless services. Participants may register with the Commission on the "Carriers" registration list as wireless providers. In 2004, the list had 15 such registrants.

In 2004-2005, a number of additional TSPs began offering wireless service. In October 2004, Primus Canada introduced a national cellular phone service, using the network of Microcell. In 2004, the Virgin Group of the United Kingdom and Bell Mobility formed a jointly-owned company, Virgin Mobile Canada and announced plans to provide mobile voice and data services. These services were launched in March 2005 in Quebec, Ontario, British Columbia and Alberta and focused on pre-paid mobile services to younger consumers. In 2005, Shaw Communications Inc. announced that it would offer, in that year, wireless service bundled with its cable services in partnership with a wireless service provider, as yet unnamed. This follows an earlier move by EastLink in partnership with RWI to offer wireless service to its customers.

In November 2004, RWI acquired Microcell, adding 1.3 million wireless subscribers to its total subscriber base.⁶⁷

d) Regulatory Framework

Since 1998, wireless services have been forborne from Commission regulation. Industry Canada however, continues to regulate the spectrum required by the wireless industry.

⁶⁶ Bell Group consists of Bell Canada, Aliant Telecom, Northwestel Mobility Inc., Télébec Mobilité, and NorTel (Northern) Mobility.

⁶⁷ Rogers Communications Inc. 2004 Annual Report.

e) *Regulatory Developments*

Following a public consultation launched in 2003, Industry Canada, on 27 August 2004, rescinded the existing mobile spectrum cap policy which was established in 1995, limiting the spectrum holdings of cellular telephone companies to encourage innovation and help new entrants become established in the cellular industry.⁶⁸ Industry Canada indicated that the wireless industry had matured with consumers having a range of voice and data services available to them. The Minister indicated that the decision was consistent with the objectives of Canadian telecommunications policy, and in particular, with fostering increased reliance on market forces for the provision of telecommunications services.

In Decision 2004-68,⁶⁹ the Commission directed TCI to offer a new optional two-way trunk service to allow wireless service providers to combine toll terminating traffic with local traffic on local trunks between these providers' point of interconnection with TCI's local switch. It was the Commission's opinion that the two-way local/toll option is in the public interest since it allows for enhanced call management services for customers and may allow for more efficient interconnection arrangements.

In Decision CRTC 2004-70,⁷⁰ the Commission approved MTS Allstream's Wireless Provider Enhanced 9-1-1 Service and the associated WSP E9-1-1 Service Agreement, subject to modifications. The Commission directed Aliant Telecom, Bell Canada, and TCI to make certain modifications to their WSP E9-1-1 service agreements.

In Decision 2004-84,⁷¹ the Commission forbore, with some conditions, from regulating cellular services provided by Prince Rupert City Telephones.

In the Government of Canada's Budget Plan tabled in Parliament in February 2005, reference was made to the Government's intention to request that the Commission move expeditiously to implement wireless number portability (WNP) which was in its three-year work plan for the 2005-2006 fiscal period. In response to this request, the wireless carriers agreed to implement WNP and began efforts to develop an implementation plan that was completed in September 2005. WNP would include wireless-to-wireless, wireline-to-wireless and wireless-to-wireline number portability.

In May 2005, Industry Canada announced a review of its spectrum policy framework to accommodate increasing demand for wireless services and the rapid pace of evolution in wireless technology.⁷²

⁶⁸ Industry Canada, *Decision to Rescind the Mobile Spectrum Cap Policy*, Notice No. DGTP-010-04, 27 August 2004.

⁶⁹ *Follow-up to Telecom Decision 2003-76. Rogers Wireless Inc. vs. TELUS Communications Inc. - Toll termination arrangements*, Telecom Decision CRTC 2004-68, 21 October 2004.

⁷⁰ *MTS Allstream Inc. - Introduction of Wireless Service Provider Enhanced 9-1-1 Service*, Telecom Decision CRTC 2004-70, 4 November 2004.

⁷¹ *Prince Rupert City Telephones - Cellular service forbearance*, Telecom Decision CRTC 2004-84, 21 December 2004.

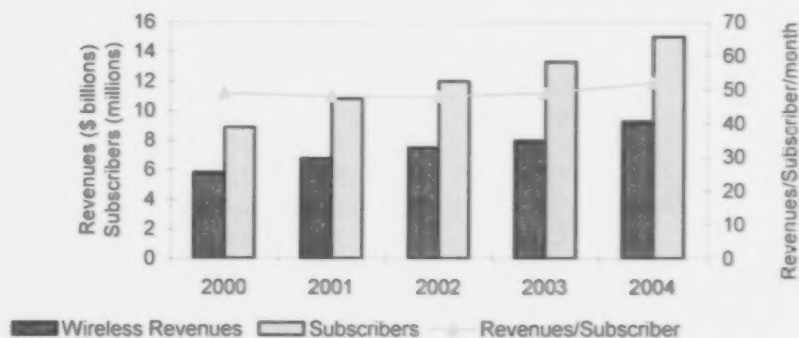
Following a consultation with the wireless industry and others, Industry Canada announced, in July 2005, a new policy that encourages regional and national wireless carriers to voluntarily provide digital roaming to non-competing rural wireless carriers.⁷³ Industry Canada stated that this will enable rural subscribers to benefit from advanced services and extended coverage across Canada.

Market Segments

As displayed in Figure 4.5.1, wireless revenues increased from \$5.6 billion in 2000 to \$9.5 billion in 2004, representing an annual growth rate of 14.1%. Similarly, the number of wireless subscribers increased from 8.9 million in 2000 to 15.0 million in 2004, resulting in an annual growth rate of 14.0%. As of June 2005, the number of wireless subscribers is estimated to be at approximately 15.6 million.⁷⁴

Figure 4.5.1 also shows the average revenue per subscriber (ARPU) for the period 2000 to 2004. Revenues per subscriber dropped from an average of \$49 per month in 2000 to \$48 per month in 2001. The downward trend reversed itself in 2002, and the ARPU gradually increased to \$52 per month in 2004. This is likely due to an increased emphasis by suppliers on post-paid plans, which generally have a higher ARPU than pre-paid plans. In addition, there is increased use of cellular phones for text messaging using the Short Message Service, Internet services, and Multimedia messaging services.

Figure 4.5.1
Wireless Revenues, Subscribers and Revenues per Subscriber



Source: CRTC Data Collection

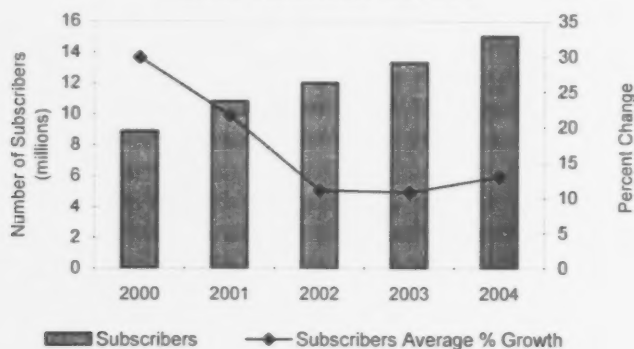
⁷² Industry Canada, *Consultation on a Renewed Spectrum Policy Framework for Canada and Continued Advancements in Spectrum Management*, Notice DGTP-001-05 13 May 2005.

⁷³ Canada Gazette Notice DGTP-006-05 - *Policy to Promote Digital Roaming for Rural Subscribers*, 21 July 2005.

⁷⁴ Based on Companies' Quarterly Reports of June 2005.

As displayed in Figure 4.5.2, the number of wireless subscribers increased significantly over the period 2000 to 2004. The rate of growth in subscribers on a yearly basis decreased significantly from 2000 to 2002, and it has gradually increased since then. Although the average annual growth rate of subscribers from 2000 to 2004 was 14%, the year-over-year increase for 2004 was 13%. In 2005, the strong growth in wireless subscriptions is continuing.

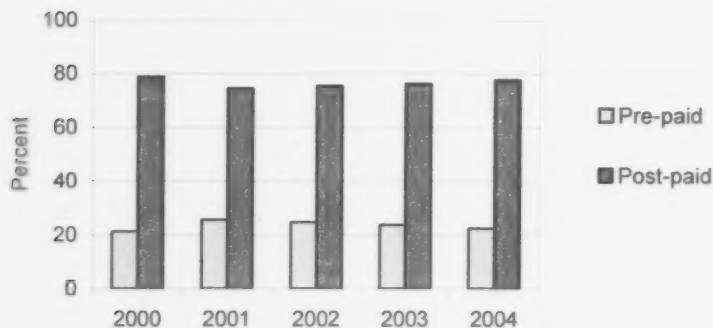
Figure 4.5.2
Mobile Subscriber Growth



Source: CRTC Data Collection

Figure 4.5.3 presents the percentage of subscribers on pre-paid and post-paid plans for the years 2000 to 2004. As displayed in this figure, the proportion of post-paid subscribers has been increasing slightly from 75% in 2002 to 78% in 2004. A variety of different post-paid plans and options give customers more choices and more services. Most wireless service providers have targeted the post-paid segment of the market in order to retain high value paying customers. As post-paid customers are generally required to commit to the supplier for a fixed length of time, the churn rate is also minimized.

Figure 4.5.3
Percent of Pre-Paid & Post-Paid Subscribers



Source: CRTC Data Collection

Major Revenue Components

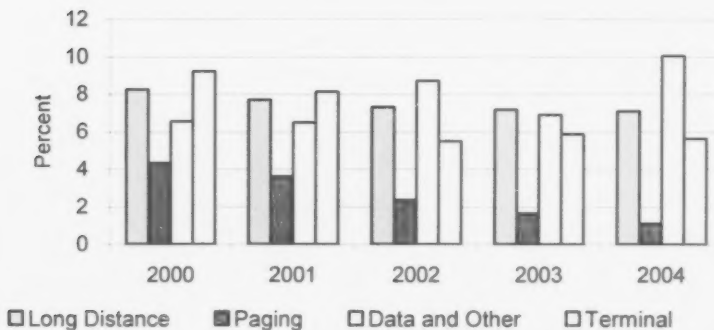
As displayed in the Markets and Observations portion of this section in Table 4.5.1, wireless revenues consisted of 5 major components: basic voice, long distance, paging, "data and other",⁷⁵ and terminal. Generally, the increase in wireless revenues can be attributed to the growth in the number of wireless subscribers and, to a lesser extent, increased use of existing and new wireless applications as reflected in these components.

Since 2000, basic voice packages have accounted for 72% to 78% of total wireless revenues. In 2004, basic voice packages were 76% of total revenues. The remaining components, as a percent of wireless revenues, are displayed in Figure 4.5.4 for the period 2000 to 2004.

Based on Table 4.5.1, long distance wireless revenues increased between 5% and 11% during the period 2001-2003 and in 2004 grew by 16%. However, these revenues as a percent of total wireless revenues in each of the years 2000-2004 were about 8% to 7%.

As shown in Figure 4.5.4, paging and terminal revenues, as a per cent of total wireless revenues declined over the five year period. Paging revenues decreased primarily due to the replacement of pagers by mobile telephones and other messaging devices. The "data and other" component as a percent of total wireless revenues increased in the first three years, declined in 2003, but increased significantly in 2004. A closer look at the "data and other" component reveals that data revenues increased in 2004 by 89.9%, but this increase was mitigated by smaller increases in the remaining revenues in that component, namely, those related to mobile roaming and interconnection.

Figure 4.5.4
Wireless Revenues by Major Component (excluding Basic Voice)



Source: CRTC Data Collection

⁷⁵ "Data and other" consist of roaming charges, interconnection charges, and mobile data revenues.

Comparison of Wholesale with Retail

The limited availability of licensed spectrum has constrained the industry to a few players. These players have focused on the retail market, entering into agreements with each other which enabled them to maximize coverage while minimizing capital expenditures. These players also offer subscription plans that include handset subsidies. These factors reduce the incentive for wireless resale. As a result, the wholesale market is small.

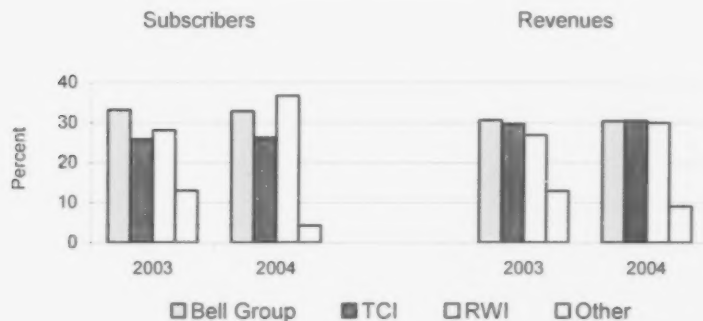
As the market evolves, the wholesale market is expected to grow. One indication of this growth is the formation of a jointly-owned company by Bell Mobility and the Virgin Group to market wireless services using Bell Mobility's network.

Market Share

Figure 4.5.5 portrays the market share of each of the major players in the industry, measured in terms of revenues and number of subscribers for 2003 and 2004.

Overall, in 2004, the three largest suppliers (The Bell Group, RWI and TCI) continued to dominate with a market share of approximately 90%. At the national level, there is no dominant supplier of wireless services.

Figure 4.5.5
Wireless Players' Market Share⁷⁶



Source: Companies' Annual Reports and CRTC Data Collection

⁷⁶ Other includes MTS Allstream, SaskTel, and smaller wireless service providers.

Table 4.5.2 presents the wireless providers' subscriber share in each province and the North⁷⁷ in 2004. A review of the data indicates that in most provinces/territories, a single supplier has over 50% of the subscribers. In Ontario and British Columbia, two suppliers each have 40% or more subscribers' share. The data also indicates that in three of the provinces, three suppliers each have at least 10% or more of the subscribers, while in six of the remaining seven provinces, there are at least two suppliers with 10% or more of the subscribers. In Newfoundland and Labrador only one supplier has 10% or more of the subscribers. In the North, there is only one provider of wireless service.

Table 4.5.2
Wireless Subscriber Share By Province (2004)

Province	Bell Group	TCI	RWI	Other
British Columbia	8%	48%	44%	0%
Alberta	10%	64%	26%	0%
Saskatchewan	0%	3%	17%	80%
Manitoba	0%	8%	30%	62%
Ontario	40%	17%	42%	1%
Quebec	49%	18%	32%	1%
New Brunswick	74%	4%	22%	0%
Nova Scotia	64%	9%	27%	0%
Prince Edward Island	89%	10%	1%	0%
Newfoundland and Labrador	87%	8%	5%	0%
The North	100%	0%	0%	0%

Source: CRTC Data Collection

Churn Rate

Table 4.5.3 shows the average monthly churn rate for each of the major players for the years 2000 to 2004.⁷⁸ The churn is calculated by dividing the number of disconnected subscriber units by the average number of units. Without number portability and platform compatibility between service providers, and with the continued preponderance of longer term post-paid contracts, these rates are generally low. The churn rates in 2004 declined for all of the major players.

Table 4.5.3
Average Monthly Churn Rates

	2000	2001	2002	2003	2004
Bell Mobility	1.5%	1.5%	1.6%	1.4%	1.3%
Microcell	2.2%	2.6%	3.4%	3.1%	see note
RWI	2.4%	2.2%	2.0%	2.1%	1.8%
TCI	2.0%	2.0%	1.8%	1.5%	1.4%

Note: Microcell was acquired by RWI in 2004

Source: Companies' Annual Reports

⁷⁷ The North includes: Yukon, Northwest Territories and Nunavut.

⁷⁸ In 2004, Microcell was acquired by RWI.

Paging

The number of subscribers in the 2004 paging market decreased over the previous year by 21.4%, and the revenues declined by 21%.⁷⁹

Bell Mobility, RWI and TCI continued to dominate the market, accounting for 87% of the paging revenues in 2004.

Mobile Coverage

The maps on the following pages show mobile coverage across Canada, by type of technology (digital/analog) and by number of service providers.

In 2004, over 94% of Canadians had access to wireless services.⁸⁰ Most Canadians had a choice of service providers, except for the North, where there was only one provider.

Mobile coverage did not expand significantly in 2004, and capital expenditures for the industry decreased by 15.4% over the previous year.⁸¹ As the wireless market evolves, it is expected that new technologies such as third-generation wireless (3G) will enable the industry to offer additional, as well as, enhanced services.

Summary

The wireless market continues to grow. The size of the market, both in terms of revenues and subscribers, increased significantly in 2004. Wireless services are available to over 94% of the Canadian population.

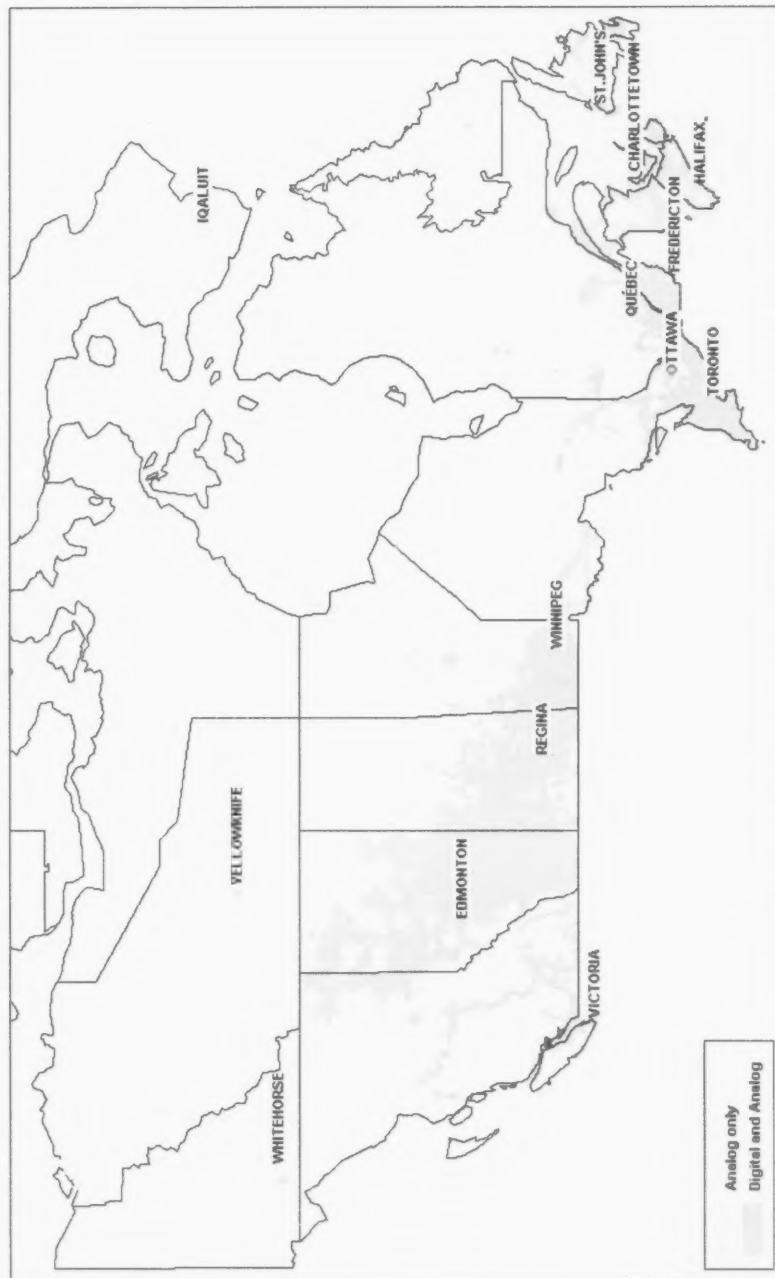
Market share, based on revenue on a national basis, of the three largest carrier groups (TCI, the Bell Group and RWI) was approximately 90%. The ARPU has continued its upward trend established in 2003, after several years of decline. The churn rate continued to be low. Paging also continued its downward trend in 2004, as it is becoming a niche market, with customers switching to other wireless technologies.

⁷⁹ CRTC Data Collection.

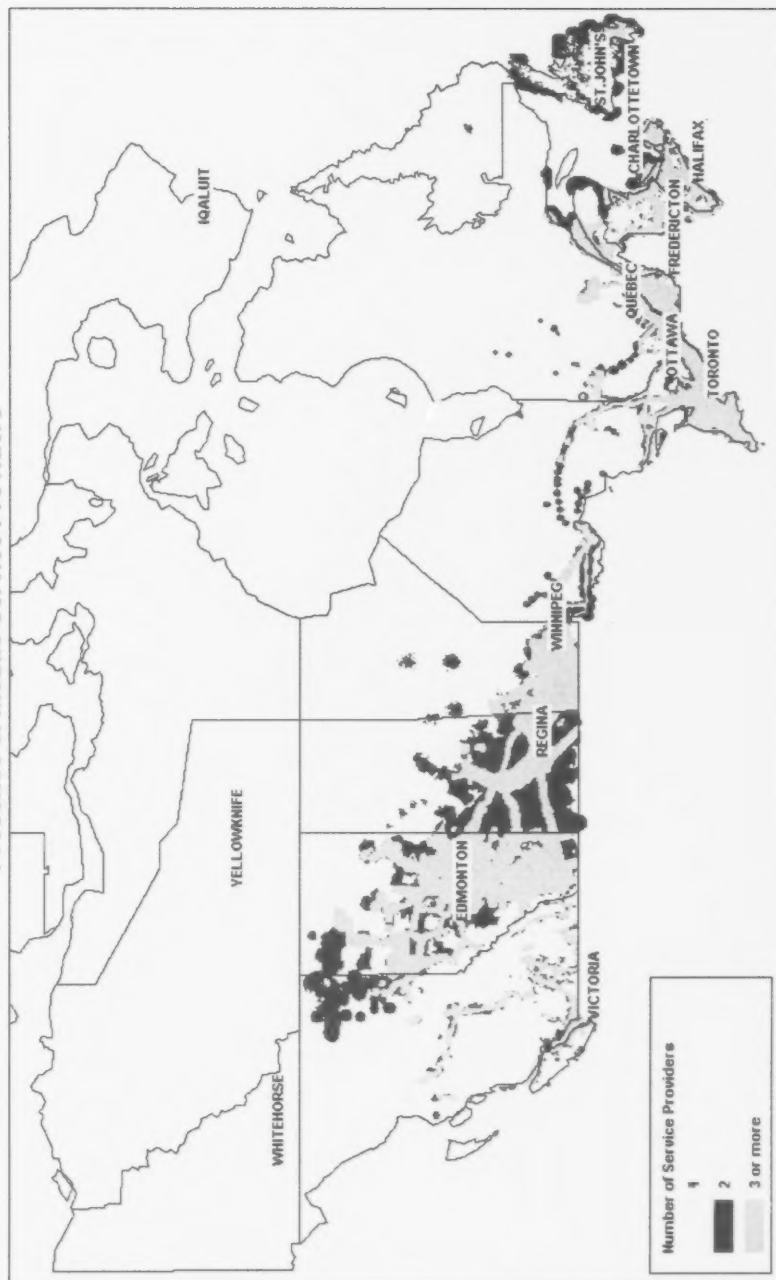
⁸⁰ Industry Canada, Notice No. DGTP-010-04, *Decision to Rescind the Mobile Spectrum Cap Policy*, 27 August 2004.

⁸¹ CRTC Data Collection.

National Mobile Coverage (Digital and Analog Service)



Presence of Mobile Service Providers



4.6 Data and Private Line

Highlights

- In 2004, data and private line revenues continued to decline, shrinking 1.6% to \$4.4 billion.
- Data revenues increased 6.9% to \$2.3 billion, surpassing private line revenues which declined 9.7% to \$2.1 billion.
- The distribution of data protocol services revenue is continuing to shift towards IP and Ethernet services.
- Competitors' share of data and private line revenues increased from 26% in 2003 to 27% in 2004.

Sector Description

a) Description of Services

Data services are used to provide access to, and connectivity between, local area data, video and voice networks within a metropolitan area or on a broader national or international scale, providing customers with managed local area network and wide area network services. Data services include legacy protocols such as X.25 (packet switched network), Frame Relay and Asynchronous Transfer Mode (ATM); newer protocols such as IP-VPN (Virtual Private Network) and Ethernet; and the provisioning and management of networks and network equipment.

Private line services provide the capability to link two or more locations over dedicated facilities for the purpose of transporting data, voice or video traffic. Private line services include high-capacity digital transmission services (at speeds ranging from 56/64 Kbps to gigabit speeds over fibre) and digital data systems, as well as voice grade and other analog services.

b) Markets and Observations for 2004

The data and private line market sector is the fourth largest telecommunications segment with revenues of \$4.4 billion or roughly 13% of total telecommunications revenues. After peaking in 2001, data and private line revenues have declined at an annual rate of approximately 1.4% over the period 2001 to 2004. In 2004, data revenues exceeded private line revenues for the first time climbing to 53% of total data and private line revenues, up from 49% in 2003.

In 2004, the 1.6% decline in data and private line revenues is attributable to the 9.7% decline in private line revenues, which was partly offset by the 6.9% increase in data revenues. The reduction of private line revenues is mainly due to a declining private line wholesale market, while higher protocol and management services revenues contributed to higher data revenues.

Data protocol revenues grew in 2004 due to growth of Ethernet and IP-VPN protocol revenues, which were partly offset by lower legacy data protocol revenues.

Table 4.6.1
Data and Private Line Revenues
(\$ millions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Data	1,883	2,069	2,092	2,184	2,334	6.9%	5.5%
Private line	2,201	2,528	2,454	2,300	2,077	-9.7%	-1.4%
Total	4,084	4,597	4,546	4,484	4,411	-1.6%	1.9%

Source: CRTC Data Collection

The competitors' revenue share of the data and private line market increased slightly from 26% in 2003 to 27% in 2004.

c) Sector Participants

Data and private line services are delivered using wireline, fixed wireless and satellite technologies by a number of players including the incumbent carriers, satellite service providers, facilities- and resale-based competitive service providers, cable undertakings and utility telcos. Data and private line services are marketed to end-customers in the retail market and to other service providers as wholesale services that are either resold directly or used to construct underlying networks used to deliver products and services to their end-customers in the retail market.

d) Regulatory Framework

Competition was first permitted in the data and interexchange private line market in 1979. The Commission has since forbore from regulating many of the incumbents' data services as well as their private line services on many interexchange routes.

Generally, the Commission forbears pursuant to section 34 of the Act when it considers that the service is, or will be, subject to a level of competition sufficient to protect the interest of users of the service. Order 99-434⁸² directs competitors to file with the Commission on 1 April and 1 October of every year, the list of interexchange private line routes on which they offer or provide service at the equivalent of DS-3 (44.736 Mbps) or greater, using their own terrestrial facilities, or terrestrial facilities leased from a company other than an ILEC or an affiliate of an ILEC. The Order further stated that upon the Commission being satisfied that one or more competitors meet this criterion, it would proceed quickly to forbear without process given that the evidence on which the forbearance determination would be made stems from the ILEC's competitors. Incumbent companies are also free to apply for forbearance at any time.

⁸² Telecom Order CRTC 99-434, 12 May 1999.

In 2005, as a result of Decisions 2005-18 and 2005-44,⁸³ an additional 1,000 interexchange private line routes were forborne from regulation.

X.25 and Frame Relay services were forborne from regulation under Order 96-130⁸⁴ in February 1996. Under Order 2000-553⁸⁵ in June 2000, wide-area network (WAN) services were forborne from regulation. The access components of ATM and Ethernet services continue to be regulated.

Generally, in forbearance decisions, the Commission retains sufficient powers under section 24 of the Act to specify, where warranted, possible future conditions upon the forborne services provided by the affected ILECs.

In 2005, the Commission issued the Competitor Digital Network (CDN) service decision,⁸⁶ which built upon the interim CDNA decision,⁸⁷ by making additional rate elements available to competitors at discounts to retail rates. The effective date of the decision is June 2002, thus in addition to an immediate reduction in operating expenses, competitors utilizing these services also realized retroactive rate adjustments.

Market Segments

a) Data Services

For the purpose of this report, data revenues have been disaggregated into six categories. Five categories constitute the data protocol services (X.25, ATM, Frame Relay, Ethernet and IP-VPN), and a sixth category (Other) relates to non-specific data protocols, network management and networking equipment. A summary of data revenues for the period 2000 to 2004 and for each of the categories is contained in Table 4.6.2.

As Table 4.6.2 illustrates, in 2004, total retail and wholesale data service revenues were approximately \$2.3 billion, representing an increase of approximately 7.4% over the previous year. Retail and wholesale data revenues posted increases of 7.2% and 8.7%, respectively.

In order to identify the trends in the data services market segment, the Commission looks at revenues for the five data protocol services, thereby excluding non-recurring revenues that are included in the Other category. Revenues realized through the non-recurring sale of network equipment that coincide with a service migration or network growth can inflate revenues for an individual year. A year over year comparison is best achieved without the impact of revenues from equipment and network management services.

⁸³ *Forbearance from regulating interexchange private line services on additional routes*, Telecom Decision CRTC 2005-44, 5 August 2005.

⁸⁴ Telecom Order CRTC 96-130, 19 February 1996.

⁸⁵ *Forbearance granted for telcos wide area network services*, Order CRTC 2000-553, 16 June 2000.

⁸⁶ *Competitor Digital Network Services*, Telecom Decision CRTC 2005-6, 3 February 2005.

⁸⁷ *Interim Competitor Digital Network Access*, Telecom Decision CRTC 2002-78, 23 December 2002.

In 2004, total revenues for the five data protocol services grew by 6% to \$1.4 billion, with aggregated revenues from Ethernet and IP-VPN services increasing to 41% of the total protocol revenues, up from 34% in 2003. This is a continuing trend noted in last year's report, and is expected to continue given the increased flexibility, capacity and interoperability that the new generation of IP services provides the end-customer. In addition to capturing revenue from the legacy data services, the newer data services are also contributing to the reduction in private line revenues due to their ability to cost-effectively replicate the capacity and security associated with private line services.

Table 4.6.2
Data Service Retail and Wholesale Revenues by Service Category⁸⁸
(\$ millions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
X.25							
Retail	134.7	140.6	134.4	131.2	102.0	-22.3%	-6.7%
Wholesale	19.3	20.2	22.5	9.1	5.7	-37.4%	-26.3%
Total	154.0	160.9	156.9	140.3	107.7	-23.2%	-8.6%
ATM							
Retail	67.1	96.7	116.0	109.5	83.6	-23.7%	5.7%
Wholesale	8.2	8.8	12.4	14.6	16.1	10.3%	18.4%
Total	75.3	105.5	128.4	124.2	99.7	-19.7%	7.3%
Frame Relay							
Retail	499.9	518.0	564.4	573.7	546.8	-4.7%	2.3%
Wholesale	65.1	80.4	73.7	76.0	78.4	3.2%	4.8%
Total	565.1	598.4	638.1	649.7	625.2	-3.8%	2.6%
Ethernet							
Retail	n/a	n/a	272.5	351.3	427.4	21.7%	
Wholesale	n/a	n/a	24.7	48.1	44.4	-7.7%	
Total			297.2	399.4	471.8	18.1%	
IP-VPN							
Retail	n/a	n/a	38.6	64.9	110.7	70.6%	
Wholesale	n/a	n/a	0.1	2.4	2.4	0.0%	
Total			38.7	67.2	113.1	68.3%	
Other							
Retail	811.7	933.7	704.3	634.6	729.2	14.9%	-2.6%
Wholesale	276.8	270.7	128.3	132.6	160.3	20.9%	-12.8%
Total	1,088.6	1,204.4	832.6	767.2	889.5	15.9%	-4.9%
Total Data							
Retail	1,513.5	1,689.1	1,830.2	1,865.1	1,999.7	7.2%	7.2%
Wholesale	369.4	380.2	261.7	282.8	307.3	8.7%	-4.5%
Total	1,882.9	2,069.3	2,091.9	2,147.9	2,307.0	7.4%	5.2%

Source: CRTC Data Collection

n/a: Not available

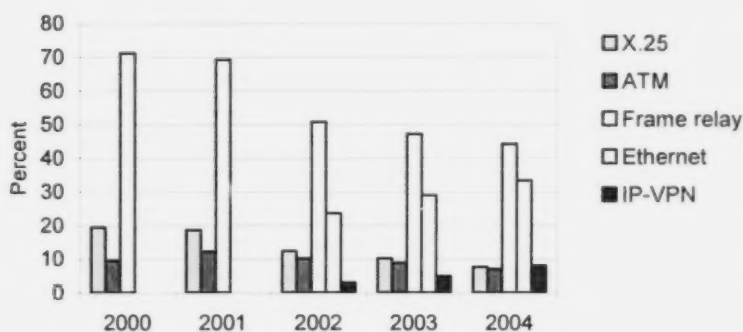
⁸⁸ Data revenues provided by smaller service providers do not provide this level of detail and are not included in this Table. This represents approximately \$27 million in 2004 and \$36 million in 2003.

Revenues for Frame Relay services declined (for the first time) by 3.8% in 2004. X.25 and ATM services revenues, which were already in decline, decreased by 23.2% and 19.7%, respectively. As with last year, IP-VPN services posted the largest revenue increase, growing 68.3% in 2004, in addition to the 74% growth in 2003. Since 2002, aggregated IP-VPN and Ethernet services revenue has increased at an annual growth rate of 32%.

The shift in revenue distribution can be seen graphically in Figure 4.6.1, which displays the revenue share of the five data protocol service categories, for the period 2000 to 2004.

Going forward, this transformation is expected to continue as service providers grandfather and migrate end-users from services based on legacy technologies, and retail customers increasingly utilize secure VPNs over both private IP networks and the Internet.

Figure 4.6.1
Data Protocol Services
Revenue Distribution by Service Category



Source: CRTC Data Collection

Table 4.6.3 displays incumbent and competitor data revenue share by data service category. The competitors' revenue share of data services increased from 28% in 2003, to 34% in 2004.

The competitors' share of revenues within specific data categories varies from approximately 9% for X.25 service to 53% for ATM.

Table 4.6.3
Market Share by Data Service Category⁸⁹

	2003	2004
X.25		
Incumbents	90%	91%
Competitors (ILEC out-of-territory)	8%	8%
Competitors (other)	2%	1%
ATM		
Incumbents	45%	47%
Competitors (ILEC out-of-territory)	2%	37%
Competitors (other)	52%	16%
Frame Relay		
Incumbents	56%	52%
Competitors (ILEC out-of-territory)	5%	31%
Competitors (other)	39%	17%
Ethernet		
Incumbents	73%	72%
Competitors (ILEC out-of-territory)	14%	16%
Competitors (other)	13%	12%
IP-VPN		
Incumbents	90%	71%
Competitors (ILEC out-of-territory)	0%	1%
Competitors (other)	10%	28%
Total		
Incumbents	72%	66%
Competitors (ILEC out-of-territory)	5%	19%
Competitors (other)	23%	15%

Source: CRTC Data Collection

b) Private Line Services

Private line service is non-switched point-to-point or multipoint connections that can be used for voice, data and video transmissions with various bandwidths. Private lines can be analog or digital, and be provided over copper wire, fibre optics or satellite. In this report, private line services have been disaggregated into two main categories: short-haul and long-haul private lines. A further breakdown of long-haul revenues between satellite and terrestrial facilities providers is also provided.

Table 4.6.4 provides a summary of industry-wide revenues for the years 2000 to 2004 for both short-haul and long-haul private line services.

⁸⁹ Competitors (other) includes competitor (cable). In 2004, at the national level, competitors (cable) had approximately 1.6% of the data revenues.

Table 4.6.4
Private Line Service Retail and Wholesale Revenues by Service Category⁽⁹⁾
(\$ millions)

	2000	2001	2002	2003	2004	<i>Growth</i> 2003-2004	<i>CAGR</i> 2000-2004
Short-Haul							
Retail	385	471	527	496 #	521	5.0%	7.9%
Wholesale	259	342	440	444 #	369	-16.9%	9.3%
Total	644	813	966	940 #	890	-5.3%	8.4%
Long-Haul							
Retail	922	971	800	739 #	732	-0.9%	-5.6%
Wholesale	635	744	688	600 #	419	-30.2%	-9.9%
Total	1,557	1,715	1,488	1,339 #	1,151	-14.0%	-7.3%
Total							
Retail	1,307	1,442	1,326	1,235	1,253	1.5%	-1.0%
Wholesale	894	1,086	1,128	1,044	788	-24.5%	-3.1%
Total	2,201	2,528	2,454	2,280	2,042	-10.4%	-1.9%

Source: CRTC Data Collection

Total private line revenues were slightly above \$2.0 billion in 2004, a decrease of 10.4% from 2003. Revenues for both the short-haul and long-haul categories were lower in 2004, declining by 5.3% and 14%, respectively. As a result, long-haul revenues now contribute 56% of the private line segment, down from 59% in 2003 and 61% in 2002.

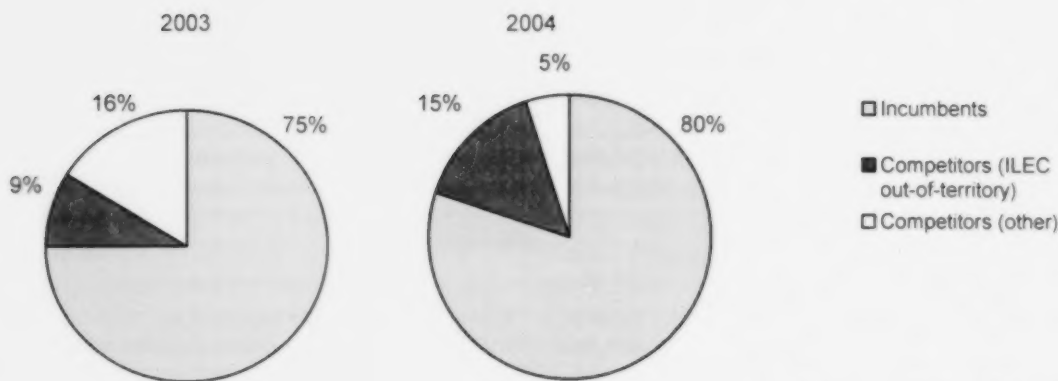
The main contributor to the reduction in private line revenues was the wholesale segment, which experienced continuing aggressive price competition. Additionally, with industry consolidation, companies strengthen and expand networks through acquired facilities, while reducing the number of competitors. In 2004, the size of the overall wholesale private line market decreased by approximately 25%, driven by the long-haul category, which decreased by about 30%.

Retail revenues grew a modest 1.5% in 2004, due to 5% growth in short-haul revenue which was partly offset by lower long-haul revenue. The increasing popularity of data services, including private IP networks; and the use of VPN's over the Internet, may be contributing to a reduction in demand for long-haul retail private line services.

As shown in Figure 4.6.2, during 2004, the incumbents gained revenue share within the smaller private line market, as the competitors' share of private line revenues declined to 20%, down from 25% in 2003. This decline is due, in large part, to the impact that the Bell Canada-360networks and MTS-Allstream transactions had on the composition of the revenue share held by the competitors.

⁽⁹⁾ Private line revenues provided by smaller service providers do not provide this level of detail and are not included in this Table. This represents approximately \$35 million in 2004 and \$20 million in 2003.

Figure 4.6.2
Total Private Line Service Revenue Distribution
Incumbents v. Competitors⁹¹



Source: CRTC Data Collection

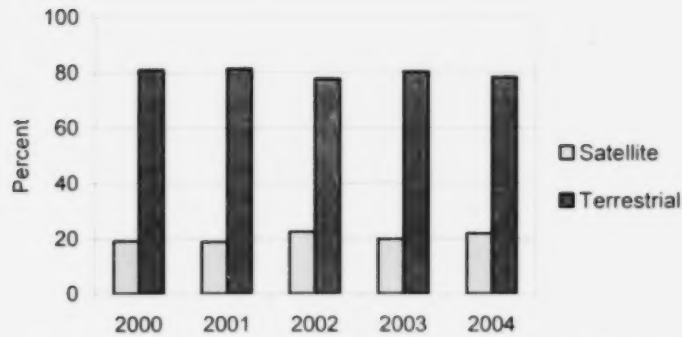
Wholesale private line service revenues peaked in 2002 at over \$1.1 billion, representing 46% of the total private line market. Since that time, wholesale revenues have declined to just under \$800 million in 2004, or 39% of total private line revenues. As both facilities-based service providers and resellers to some degree utilize private line circuits provided through the wholesale channel of other service providers, factors contributing to the decline of wholesale revenues may include:

- lower rates charged for services due to aggressive price competition and through reductions directed by the Commission;
- reduced spending by competitors as a result of network optimization activities; and
- industry consolidation, which has reduced overall wholesale demand.

Long-haul private line services are provided using both terrestrial and satellite facilities. As displayed in Figure 4.6.3, the share of the total retail and wholesale long-haul private line revenues provided via satellite increased from 20% in 2003 to 22% in 2004.

⁹¹ Competitors (other) includes competitor (cable). In 2004, at the national level, competitors (cable) had approximately 0.7% of the private line revenues.

Figure 4.6.3
Long-Haul Private Line Services
Satellite v. Terrestrial Facilities



Source: CRTC Data Collection

Table 4.6.5 displays that the competitors' share of private line revenues declined from 25% in 2003 to 20% in 2004.

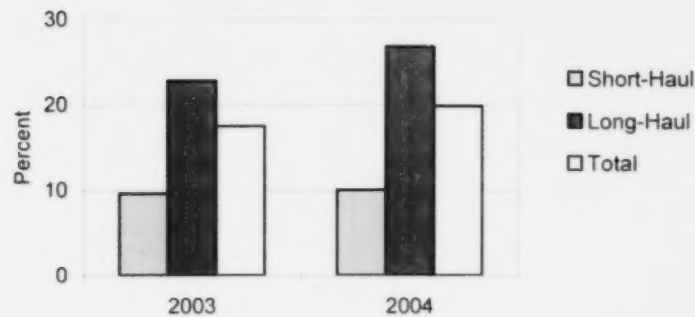
Table 4.6.5
Private Line Service Revenues
Short-Haul and Long-Haul Market Share

	2003	2004
Short-Haul		
Incumbents	79%	90%
Competitors (ILEC out-of-territory)	10%	9%
Competitors (other)	11%	1%
Long-Haul		
Incumbents	73%	72%
Competitors (ILEC out-of-territory)	8%	20%
Competitors (other)	19%	7%
Total		
Incumbents	75%	80%
Competitors (ILEC out-of-territory)	9%	15%
Competitors (other)	16%	5%

Source: CRTC Data Collection

Figure 4.6.4 shows the competitors' retail private line revenue share for 2003 and 2004. As illustrated, the competitors' retail revenue share grew slightly to just under 20%, with both the short-haul and long-haul categories experiencing revenue share gains.

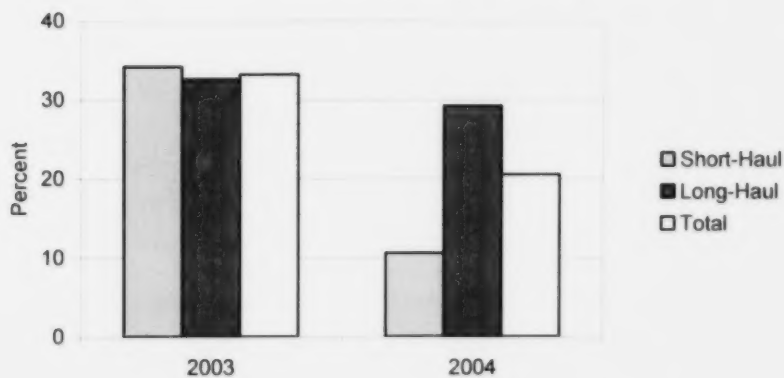
Figure 4.6.4
Retail Private Line Service Revenues
Competitors' Revenue Share



Source: CRTC Data Collection

Figure 4.6.5 illustrates the change in competitors' wholesale private line revenue share for 2003 and 2004. The competitors' revenue share of both the short-haul and the long-haul categories declined, resulting in an overall decline to just over 20% in 2004, down from 33% in 2003.

Figure 4.6.5
Wholesale Private Line Service Revenues
Competitors' Revenue Share



Source: CRTC Data Collection

Summary

Since peaking in 2001, data and private line revenues have steadily declined, falling another 1.6% in 2004. At the same time, the data and private line market is displaying the characteristics of a competitive market as newer data services are replacing legacy data services and private line services. In 2004, the competitors' share of data and private line revenues increased to 27%, up from 26% in 2003.

Data revenues have grown every year since 2000, adding another 6.9% in 2004. Ethernet and IP-VPN services experienced another year of strong growth; collectively they held 41% of data protocol revenues, up from 34% in 2003. In 2004, competitors held 34% of data revenues.

Private line revenues continue to decline, falling another 9.7% in 2004. This decline is a result of the long-haul private line category where retail and wholesale revenues fell by 0.9% and 30.2%, respectively. The wholesale long-haul private line market segment is particularly affected by aggressive price competition and industry consolidation. In 2004, competitors held 20% of private line revenues.

5.0 Broadband Availability and Promising Means for Accelerated Broadband Deployment

Highlights

- Broadband service was available to approximately 89% of Canadian households in 2004 compared to 86% in 2003.
- Broadband service was available to 98% of households in urban centres and approximately 68% of households in rural centres.
- Of those who can have broadband service, approximately 48% actually subscribed to the service.

5.1 Introduction

It is well recognized that, among other benefits, access to broadband networks and services in rural and northern communities supports quality education and health care, job creation and, more generally, helps sustain the vitality of those communities. Consequently, closing the "digital divide" between urban and rural and remote areas of Canada by ensuring that broadband access is available in every Canadian community is a key priority for the federal government as well as other levels of government.

This section reviews the extent to which broadband access is available in both rural and urban centres in Canada and the extent to which Canadians subscribe to broadband service. The remaining portion of this section provides an update on promising means for accelerated broadband deployment.

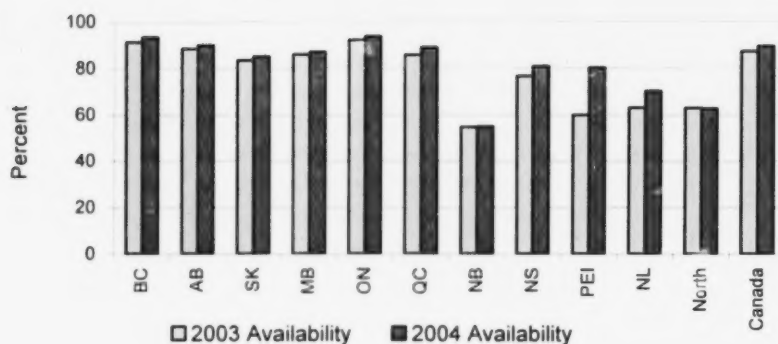
5.2 Geographic Broadband Deployment in Urban and Rural Areas

As displayed in Figure 5.2.1, limited progress has been made in the deployment of broadband infrastructure in 2004. As of December 2004, approximately 38% of the communities in Canada had access to broadband services.⁹² However, when viewed on a household basis, approximately 89% of Canadian households could have access to broadband services in 2004 compared to 86% in 2003. With the deployment of Telesat's Ka band, broadband service was, as of July 2005, available to an additional 150 thousand subscribers.⁹³ With this deployment, broadband availability has increased to 90% of Canadian households as of July 2005.

⁹² Source: Industry Canada: Broadband Directorate.

⁹³ Source: Evidence filed by Telesat Canada pursuant to *Review and disposition of deferral accounts for the second price cap period*, Telecom Public Notice CRTC 2004-1, 24 March 2004 (Public Notice 2004-1).

Figure 5.2.1
Broadband Availability
2003 v. 2004



Source: Industry Canada and CRTC Data Collection

As a result of large projects currently underway in the North⁹⁴ and New Brunswick, significant progress will be realized once these projects are completed. In particular, the North will realize close to 100% availability of Broadband service upon completion of the projects in the North that are funded by both the Broadband Pilot Program and National Satellite Initiative.

In New Brunswick, an agreement has been reached between the federal government and Aliant Telecom to finalize funding for a province-wide broadband program. Once completed in 2006, broadband coverage will have been extended to 327 communities in New Brunswick, including all of the First Nations communities in the province.

In 2004, Prince Edward Island realized an increase from 60% to 80% in Broadband availability. This can be directly attributed to the Broadband Pilot Program, which funded 4 projects, the largest of which was completed in 2004.

Figure 5.2.2 compares the availability of broadband access for urban and rural⁹⁵ households. In 2004, virtually all (98%) of Canadian households in urban centres, representing 72% of all Canadian households, could have access to broadband services versus 68% for rural⁹⁶ centres.⁹⁷

⁹⁴ The North includes the Yukon, Northwest Territories and Nunavut.

⁹⁵ Urban is defined as built up areas within Census Metropolitan Areas (CMAs), being classified as urban cores, urban fringes, and secondary urban cores. Rural is defined in accordance with the "rural areas and small towns" definition of Statistics Canada. This includes rural fringes, which are rural areas within CMAs, and urban areas outside of CMAs.

⁹⁶ It should be noted that the methodology used to identify broadband availability in rural areas may overstate availability of broadband service in rural areas, since communities are taken to be served if service is reported within them.

⁹⁷ Due to granularity of the postal code structure in urban centres, broadband details by postal code collected by the CRTC Data Collection System were used to identify the availability of broadband service within urban centers. However, in rural areas and the North where the postal code structure does not lend itself to data collection in sparsely populated areas, information gathered by Industry Canada was utilized.

On a provincial/territorial basis, broadband access is available to over 80% of the households for all areas, except for New Brunswick, Newfoundland and Labrador and the North, where this falls between 55% and 70%.

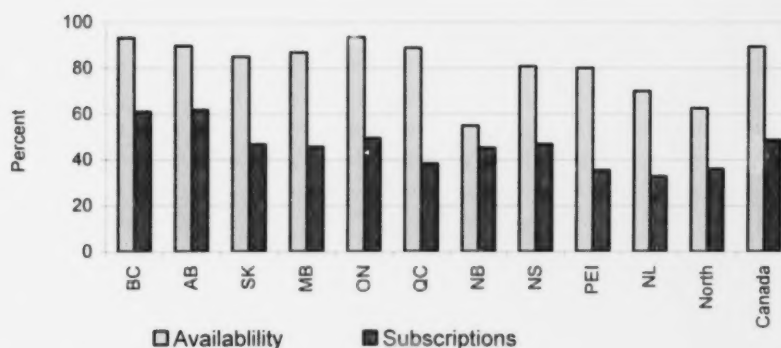
Figure 5.2.2
Broadband Availability
Urban v. Rural



Source: Industry Canada and CRTC Data Collection

As displayed in Figure 5.2.3, while 89% of Canadian households can have access to broadband services, 48% of these households actually subscribe to the service.

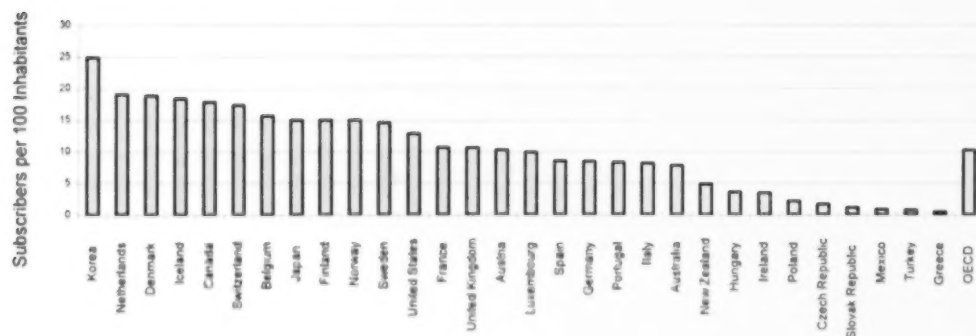
Figure 5.2.3
Broadband Availability v. Subscriptions



Source: Industry Canada and CRTC Data Collection

With respect to the G8 group⁹⁸ of countries, Canada ranks number one with respect to broadband availability. As illustrated in Figure 5.2.4, as of December 2004, Canada ranks fifth internationally in terms of broadband subscription rate per 100 inhabitants when compared to the member countries of the Organisation for Economic Co-operation and Development (OECD). In 2004, Canada slipped three positions from its second place standing in 2003. As noted by the OECD, broadband markets in its member countries continued their rapid growth during 2004. The OECD also noted that, while all OECD countries have seen an increase in broadband subscriptions, growth has been particularly rapid in parts of Europe.

Figure 5.2.4
Broadband Access in OECD Countries
per 100 Inhabitants (December 2004)



Source: OECD

5.3 Promising Means for Accelerated Broadband Deployment

Previous Monitoring Reports have provided detailed overviews of government programs designed to support the deployment of broadband access and transport facilities in rural, remote, northern and First Nations communities. In what follows, an update on the status of existing federal and provincial broadband programs is provided along with proposed private sector initiatives aimed at completing these programs.

⁹⁸ The G8 group of countries include: Japan, the United States, Italy, United Kingdom, Germany, France, Canada and Russia.

a) Federal Government Broadband Programs

One of the first major steps taken by the federal government to address the "digital divide" was the establishment of the National Broadband Task Force (NBTF) in early 2001. The NBTF estimated, at that time, that the cost of providing broadband access in unserved Canadian communities ranged from close to \$3 billion to slightly more than \$4.5 billion, depending on the mix of technologies used. This cost was to be shared by public and private stakeholders.

The NBTF recommended two alternative government-supported approaches for the deployment of broadband services to communities where market-driven solutions are not feasible. The first recommended approach involves the provision of public support to a local demand aggregator or community champion responsible for delivering broadband services within currently unserved communities. The second recommended approach involves the provision of public support for the construction of broadband infrastructure, including transport facilities to a point of presence in an eligible community, as well as distribution and access infrastructure within the community.

The two federal government programs were subsequently established to directly support broadband deployment in rural, remote, northern and First Nation communities, each of which followed one of these two recommended approaches.

The first of the programs is Industry Canada's Broadband for Rural and Northern Development (BRAND) Pilot Program.⁹⁹ Launched in September 2002, the BRAND program was modeled on the above-noted local aggregator/community champion funding model. The federal government committed a total of \$105 million to the BRAND program which was scheduled to run for three years.

BRAND funding is made available through two phases. In the first phase, eligible applicants submit proposals for "seed funding" to support the development of a business plan. In the second phase, funds are made available to successful applicants to implement their broadband service proposals.

Two funding application rounds were scheduled under the program. The first was initiated in the fall of 2002 and the second followed in the spring of 2003. In October 2003, successful first round applicants were announced. They received \$44 million in funding through BRAND to support the implementation of broadband initiatives in 433 rural, remote, northern and First Nations communities.¹⁰⁰ Subsequently, in May 2004, successful second round applicants were announced, who received \$35 million in funding under the program to support the implementation of broadband initiatives in a further 451 rural, remote, northern and First Nations communities. In total, roughly 880 rural, remote and northern communities, of which approximately 115 are First Nations reserves, have benefited from BRAND funding to date.

⁹⁹ Details of the BRAND Pilot Program are available at: <http://broadband.gc.ca/>.

¹⁰⁰ Broadband communities are based on aggregation of dissemination areas as defined by Statistics Canada, with a naming convention based on postal codes.

Of the total amount of funding available under BRAND, roughly \$80 million has been spent in support of broadband network and service deployment projects in rural, remote and northern communities. Moreover, partner contributions have more than matched the total amount invested by the federal government in the initiative.

At this time, all existing BRAND funds are fully committed and no further application rounds are scheduled.

The second of the two programs is the *National Satellite Initiative* (NSI).¹⁰¹ This program was jointly launched in October 2003 by Infrastructure Canada, Industry Canada and the Canadian Space Agency (CSA). Administered by Industry Canada's Broadband Office, NSI is based on the infrastructure support model recommended by the NBTF.

The NSI program was created to specifically address the high cost of broadband access for communities in the mid to far North and in isolated and remote areas of Canada where satellite technology is the only reasonable means of providing broadband access. NSI funding is provided to eligible communities through partnerships with provincial and territorial governments. Satellite capacity or a funding contribution, as the case may be, is made available for the deployment of broadband services via satellite to public institutions, such as schools and hospitals, as well as residences and businesses, in qualifying rural and remote communities.

The total funding committed under the NSI program is \$155 million, with \$85 million of this total coming from the Canadian Strategic Infrastructure Fund (CSIF). The balance is being provided by the CSA, which is contributing a \$50 million satellite capacity service credit to the program, and by Telesat Canada, which is contributing a further \$20 million in satellite capacity. Ultimately, the goal of NSI is to lower the cost of broadband access for roughly 400 communities in the mid to far North.

Funding under the NSI program is being made available in three application rounds. The first, which was completed in April 2004, provided four successful applicants with satellite capacity valued at approximately \$20 million over 15 years. The proposals to be implemented under this first round of funding will provide broadband services via satellite to over 50 remote communities in B.C., Manitoba, Ontario and Quebec, 41 of which are First Nations or Inuit communities.

The deadline for second round NSI program applications was May 2005. Funding in this round will be drawn from the \$85 million CSIF component of the program. In this case, a 50/50 cost-sharing formula applies where approximately 50% funding of successful broadband proposals would come from the CSIF and the balance would come from other funding sources such as provincial, territorial or First Nation governments, and/or third-party participants.

¹⁰¹ Details of the NSI Program are available at: <http://broadband.gc.ca/>.

A third application round under the NSI program is also planned which will pertain to the \$50 million CSA component of the program representing satellite capacity to be made available for eligible public and community-based institutions in the North and far North over the next 11 years. This component of the NSI program will not, however, cover the cost of the ground segment, gateway service, local access terminals or Internet service. Industry Canada is currently working in cooperation with interested parties to develop a strategy for delivering funding in this round of the NSI Program.

As outlined in previous Monitoring Reports, in addition, to the BRAND and NSI programs, the federal government has introduced a variety of other initiatives which directly and indirectly support the deployment of broadband networks and services across the country. These include Infrastructure Canada initiatives such as the CSIF, which as already noted, supports the NSI program in part, the Municipal Rural Infrastructure Program, as well as various regional development programs. There are also a range of *Connecting Canadians* initiatives such as the *Community Access Program* and *SchoolNet*, including *First Nations SchoolNet* that may indirectly contribute to the deployment of broadband facilities. As well, the federal government is also a partner in CANARIE, Canada's advanced Internet development organization, whose mission is to accelerate the development of Canada's advanced Internet infrastructure and next-generation communications products, applications and services.

It should also be noted that in April of this year, Industry Canada established a Telecommunications Policy Review Panel.¹⁰² This Panel has been asked to study and, by year end, report on several key areas of importance to the industry. Specifically, the Telecom Review Panel has been asked to provide recommendations that would help ensure that all Canadians continue to have an appropriate level of access to modern telecommunications services, including access to high-speed networks.

¹⁰² Industry Canada News Release, "Minister Emerson Appoints Members of Telecommunications Policy Review Panel", 11 April 2005.

b) Provincial and Territorial Broadband Deployment Programs

Most provincial and territorial governments have also implemented programs aimed at supporting the deployment of broadband facilities in their respective territories. The Commission's 2003 Monitoring Report provided a detailed overview of provincial and territorial broadband programs in existence at that time, and last year's Monitoring Report provided an update on the status of these programs.

At this time, most provincial government broadband programs are at or near completion, with some exceptions. Moreover, all territorial broadband programs have long been completed. Broadband deployment in the North is now largely dependent on the federal government's BRAND and NSI programs.

One of the exceptions is B.C., where *NetWork BC* was established last year by the Premier's Technology Council to work with communities in the province and the private sector to bridge the "digital divide" in B.C. by 2006. The approach *NetWork BC* is following involves upgrading and extending the existing Shared Provincial Access Network (SPAN/BC) to accomplish this task. Under the plan, 366 communities¹⁰³ in the province were identified as a priority for broadband access, 151 of which currently do not have access to broadband services. In April of this year, the Province of B.C. and TCI announced that they had reached an agreement that would ensure that affordable, high-speed open network access is brought to all of the targeted communities by the end of 2006.¹⁰⁴ No specific funding requirement was announced. It appears the costs of the expansion will be covered through the rates charged to the users (government and others) of the services provided over the network.

In Alberta, it was announced in February of this year that the Alberta *SuperNet* is now in the final stage of completion.¹⁰⁵ The Alberta *SuperNet* project, undertaken by the Government of Alberta, Axia NetMedia and Bell Canada, will link some 4,200 government, health, library and education facilities in 429 communities across the province once completed. The total network was scheduled for completion in September 2005.

¹⁰³ In this case, communities are defined as any location in the province with a place name and either a public school, library or healthcare facility.

¹⁰⁴ British Columbia News Release, "Broadband expansion spells opportunity for B.C.", 7 April 2005.

¹⁰⁵ Alberta News Release, "Government of Alberta, Axia, and Bell Canada announce *SuperNet* completion plan", 22 February 2005.

In Saskatchewan, SaskTel is continuing the second phase of the province's *CommunityNet* program which provides broadband access to schools, libraries and provincial institutions in rural communities, and remote areas of the province. The \$34 million *CommunityNet II* initiative, announced in June 2004, will provide wireless high-speed Internet access to schools and libraries in a minimum of 71 communities in the province and their surrounding areas over the next several years.¹⁰⁶ In addition, the \$12 million *Northern Broadband Network* initiative will see the expansion of high-speed Internet to 35 northern communities by the end of 2006. Half of the funding for this project comes from SaskTel and the balance from BRAND and other federal western and northern regional development funds.¹⁰⁷

No changes to existing broadband development programs have been announced in the provinces of Manitoba, Ontario, Quebec or in the four Atlantic Provinces. However, it should be noted that Ontario's *Connecting Ontario: Broadband Regional Access (COBRA)* program has been suspended as of mid 2004, pending a review of the province's overall long term infrastructure support plans. In Québec, the *Villages Branchés du Québec* remains in operation, but the deadline for applications has long passed (i.e., the last due date for applications under the program was in November 2003).

There are ongoing broadband projects being jointly funded by the provinces and the federal government. For instance, in the fall of 2004, Quebec and the federal government jointly announced a \$14 million project to construct an underwater fibre optic link between Gaspésie and Îles-de-la-Madeleine to provide broadband access to schools and hospitals, among others, on the islands. The Government of Quebec provided half of the funding, while the balance will come from the CSIF.¹⁰⁸

The Province of New Brunswick recently completed an agreement with the federal government and Aliant Telecom to finalize funding for a province-wide broadband program. The program had initially been announced in late 2003. The total value of the program is \$45 million, with the province contributing \$13 million of the total, and the federal government (via the CSIF) and Aliant Telecom roughly splitting the balance equally.¹⁰⁹ Once completed in 2006, broadband coverage will have been extended to 327 communities in New Brunswick, including all of the First Nations communities in the province.

A summary of existing initiatives is provided in Table 5.3.1. As indicated in the table, provincial governments have committed roughly \$600 million in funding spread over multi-year periods under existing broadband programs. This total includes some federal funding, such as the \$22 million in CSIF funding in the cases of New Brunswick and Newfoundland and Labrador.

¹⁰⁶ *CommunityNet I* provided broadband access to 366 Saskatchewan communities at a cost of \$71 million.

¹⁰⁷ Saskatchewan News Release, "Northern Saskatchewan High-Speed Access Funding Completed", 7 January 2005.

¹⁰⁸ Infrastructure Canada News Release, "Government of Canada invests in fibre optic cables for Îles-de-la-Madeleine", 3 September 2004.

¹⁰⁹ New Brunswick News Release, "Province signs broadband agreement with federal government and Aliant", 21 March 2005.

In addition to the provincial initiatives, FedNor also announced \$10 million to help communities and rural businesses without access to broadband by deploying broadband Points of Presence to communities, and by assisting rural businesses to find creative solutions to their broadband needs.

Table 5.3.1
Summary of Provincial Broadband Deployment Initiatives

Province	Funding (\$M)	Description
Alberta	193	<i>SuperNet</i> project linking 422 communities across Alberta
British Columbia		<i>NetWork BC</i> project to expand SPAN/BC broadband network to 366 communities across B.C. (No explicit contribution made by the provincial government)
Manitoba	47	Upgrade and expansion of the Province's broadband network to reach an additional 85 communities
New Brunswick	29	Joint project with federal government and Aliant Telecom to expand broadband to most communities in province (total includes provincial and federal government CSIF contributions)
Newfoundland & Labrador	10	Private/public initiative focused on educational institutions across the province (total includes equal contributions from the province and federal government CSIF)
Nova Scotia	1	<i>Information Economy Initiative</i> focused on educational institutions across the province (Aliant Telecom contributed \$5M to the project)
Ontario	55	<i>COBRA</i> aimed at funding the construction in rural and northern communities in Ontario - suspended as of mid 2004
Prince Edward Island		Program recently completed.
Quebec	150	<i>Villages Branchés du Québec</i> aimed at linking educational and municipal institutions to provincial government's broadband network
Saskatchewan	117	<i>CommunityNet I & II</i> and <i>Northern Broadband Network</i> initiatives providing broadband services in well over 450 communities
TOTAL	602	

c) Proposed Private Sector Initiatives

Certain parties to the current ongoing proceeding relating to the review and disposition of the large ILECs' deferral accounts¹¹⁰ established for the second price cap period, have proposed that deferral account balances be used in whole or part to fund the deployment of broadband networks and access services to rural and remote areas. While the proposals in this respect are varied in nature, they are all aimed at complementing existing federal and provincial government broadband programs.

The Commission is currently considering these proposals along with other proposals to dispose of the ILEC deferral account balances. The Commission will issue its ruling on the appropriateness of using existing deferral account balances to fund broadband deployment initiatives in its decision.

5.4 Progress under Existing Initiatives

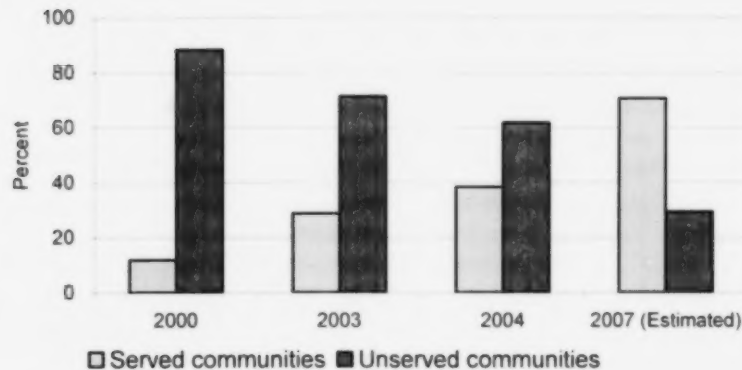
According to the Broadband Pilot Program National Selection Committee, which issued a status report on the program,¹¹¹ investments made through the pilot program are expected to extend broadband access to approximately 880 rural, northern and First Nation communities by year end 2005. Moreover, the Committee also estimates that complementary investments made through the NSI and CSIF, as well as provincial and territorial broadband initiatives, including private sector participation, should extend broadband access to an additional 700 previously unserved communities by year end 2005. In total, therefore, roughly 1,500 otherwise unserved communities will have broadband access by the end of 2005 as a result of these various initiatives.

Without these government broadband initiatives, the National Selection Committee estimates that some 3,250 of Canada's 5,500 total communities would have remained without broadband access as of year end 2005, representing roughly 60% of all Canadian communities or 3 million Canadians (i.e., 10% of the population). However, as a result of the Broadband Pilot Program and other federal, provincial and territorial government broadband deployment initiatives, it is estimated that approximately 2000 communities will remain unserved as of year end 2007. Consequently, the existing government broadband programs have proved successful in significantly reducing the number of communities in Canada without broadband access to the Internet.

¹¹⁰ In Decision 2002-34 and *Implementation of price regulation of Têlêbec and TELUS Québec*, Telecom Decision CRTC 2002-43, 31 July 2002, the Commission introduced a mechanism requiring each ILEC to establish a deferral account. The purpose of the deferral account was to provide a mechanism to mitigate potential adverse effects on local competition as a result of mandated rate reductions for local service. These rate reductions could result from the Price Cap regime to the basket of residential local services in non-high cost serving areas (non-HCSAs). The ILECs were directed to assign to that account, an amount equal to any revenue reduction that would otherwise be required. In March 2004, the Commission issued Public Notice 2004-1 to review and dispose of these amounts.

¹¹¹ National Selection Committee Report, 31 March 2004.

Figure 5.4.1
Communities With and Without Broadband Access
Broadband Pilot Program



Source: Industry Canada

5.5 Summary

Most Canadians have access to broadband service. Nationally, approximately 89% of Canadian households can have broadband service. Nationally, over 98% of households in urban centres can have broadband service, but at most only 68% can have it in rural communities. Although Canadians living in urban communities have very high availability rates for broadband service, the same cannot be said of those living in rural communities. This highlights the need for programs such as the Broadband for Rural and Northern Development Pilot Program administered by the federal government and various other provincial programs or initiatives such as Saskatchewan *CommunityNet*.

In all provinces/territories, except for the Atlantic provinces and the North, over 80% of all households can have access to broadband service. In the Atlantic provinces and the North, the availability of broadband service is between 55% and 80% of households. With the completion of the current projects in the North, this is expected to rise to almost 100%.

At the national level, of those who can have access to broadband service, 48% actually subscribe to the service. The potential introduction of various bundle packages that combine various service offerings such as Internet, video and local voice as well as the introduction of VoIP service may lead to increases in Internet subscription rates.

6.0 Users of Telecommunications Services

6.1 Introduction

This section provides information on retail service provided to the end users of telecommunications services, namely, residential consumers and business customers. In addition, it presents the results of a survey, conducted by Decima Research Inc. (CRTC 2005 Decima Survey)¹¹² for the Commission in May 2005, to assess residential consumer behaviour, perceptions and awareness with respect to various telecommunications services. The survey measured household expenditures and choices in telecommunications services, wireless and Internet usage, and ascertained consumers' views on regulation and benefits of competition.

In 2004, total expenditures on telecommunications services by residential consumers and business customers were approximately \$29.5 billion, up 7.5% from 2003. Of these expenditures, \$9.3 billion or 32% related to wireless services and \$20.2 billion or 68% related to wireline services. Of the expenditures made on wireline services, approximately \$10.7 billion or 53% related to residential consumers and \$9.4 billion or 47% to business customers.

6.2 Residential Consumers

Availability of Service

According to the most recent data from Statistics Canada, in 2003, 98.8%¹¹³ of Canadian households had wireline and/or wireless telephone service, up marginally from 98.7% in 1999.

To maintain a high level of telephone service that meets the basic service objective¹¹⁴ as established by the Commission, and to continue to expand local telephone service in Canada, the ILECs were directed to file service improvement plans (SIPs)¹¹⁵ for Commission approval. These SIPs outlined how, over a four-year period, the companies proposed to improve or upgrade telephone service, and to expand service in high-cost and non-high-cost serving areas.¹¹⁶

¹¹² The Decima Survey sample consisted of 2,022 households across Canada. This sample size provided an overall margin of error within +/- 3.1%, 19 times out of 20.

¹¹³ This is based on monitoring reports submitted by the ILECs pursuant to *Commission modifies reporting requirements for affordability*, Order CRTC 2000-393, 10 May 2000. The June 2005 report was filed with the Commission on 30 June 2005 and included penetration rates for 2003 based on Statistics Canada surveys.

¹¹⁴ In *Telephone Service to High-Cost Serving Areas*, Telecom Decision CRTC 99-16, 19 October 1999 (Decision 99-16), basic service objective was defined as local telephone service consisting of: (a) an individual local line with touch-tone dialling; (b) dial-up Internet access service without incurring long distance charges; (c) enhanced calling features, access to emergency services, Voice Message Relay service, and privacy protection features; (d) access to operator and directory assistance services; (e) access to the long distance network; and (f) a copy of a current local telephone directory.

¹¹⁵ Decision 99-16.

¹¹⁶ Decision 2002-34.

The SIP programs in high-cost serving areas are funded by the National Contribution Fund.¹¹⁷ Under the contribution regime, all telecommunications service providers that exceed a certain revenue threshold are required to contribute to the fund. SIP programs in non high-cost serving areas are funded from the ILECs' deferral accounts.¹¹⁸

The companies are continually reviewing and updating the number of premises requiring service or upgrading of service that are eligible for funding. Table 6.2.1 displays the cumulative results of the SIP program since 2002.

Table 6.2.1
Service Improvement Program Status

	2002	2003	2004	<i>Change (2003-2004)</i>
Unserved premises	19,680	26,620	26,486	
Underserved premises	34,700	38,995	39,027	
Total number of SIP communities	1,626	3,218	3,248	
Previously unserved Premises (service provided by SIPs)	742	5,402	12,877	138.4 %
Previously underserved Premises (now with basic service)	14,219	20,961	34,200	63.2 %
Number of communities with service provided or improved to basic service under SIPs	221	865	1,703	96.9 %
Percent of unserved premises now with service under SIPs	3.8 %	20.3 %	48.6 %	
Percent of underserved premises improved to basic service under SIPs	41.0 %	53.8 %	87.6 %	

Source: ILECs' approved SIP filings for 2004 and previous years.

Since 2002, the Commission has reviewed and approved SIPs from the large and small ILECs that identified 26,486 unserved and 39,027 underserved¹¹⁹ premises in more than 3,200 communities. SIPs have continually improved the level of local service. The impact of the SIPs is demonstrated by the fact that 49% of households identified under the program as unserved were receiving basic service by year end 2004. In addition, 88% of previously underserved households in SIP areas have received improved service as defined in Decision 99-16.

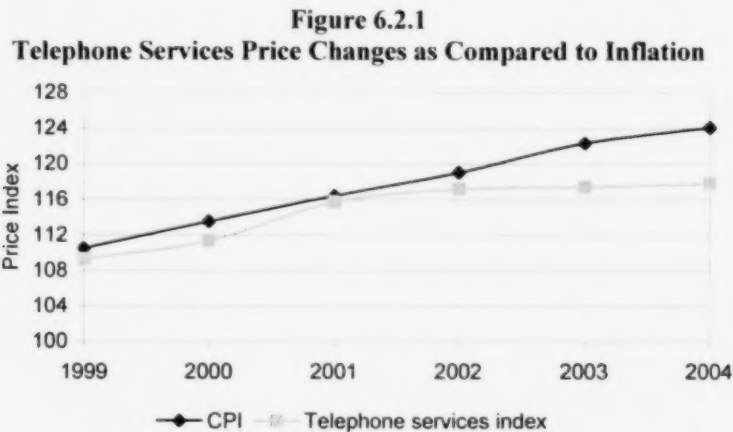
¹¹⁷ *Changes to the contribution regime*, Decision CRTC 2000-745, 30 November 2000 and Decision 2002-34.

¹¹⁸ Decision 2002-34.

¹¹⁹ In Decision 99-16, underserved households were those with telephone service that did not meet the basic service objective.

Pricing

In Figure 6.2.1, a price index reflecting the price changes experienced by a household for a basket of telephone services is compared to the consumer price index (CPI) for the period 1999 to 2004. The telephone service price changes reflect a weighted average of consumer expenditures on basic local service, other local services (such as options and features), long distance, installation and repair charges. They do not, however, include wireless or Internet service expenditures.¹²⁰



Source: Statistics Canada

Throughout the 1999 to 2004 period, the telephone services price index remained below the CPI. During the 1999-2001 period, the rates for basic local service to residential consumers increased in most urban and rural areas, consistent with the regime established by the Commission's 1997 price cap decision¹²¹ which applied to the large ILECs (except for SaskTel). During this period, the Commission imposed an overall price cap constraint on ILECs' services that was tied to the rate of inflation less a productivity factor of 4.5%.

In 2002, the price cap regime was continued for another four years with various changes to the service baskets and to the pricing constraints for the services in residential and optional local services.¹²² Under this regime, residential consumers, on average, would not see a rate increase for basic local services unless inflation exceeded 3.5%. In 2003 and 2004, the ILECs did not increase basic residential local rates.

¹²⁰ Statistics Canada Catalogue No. 60-010XPB 1996-98; 62-001XPB 2001-2005; 62-001, 2004.

¹²¹ Decision 97-9.

¹²² Decision 2002-34.

Expenditures on Telephone Services

Since 2001, residential consumers have been spending less than 1.5% of their annual household expenditures¹²³ on traditional¹²⁴ telephone services. From 1996 to 2001, shifts in the pricing of telephone services took place in conjunction with growing competition in the long distance market. In 1996, long distance and local services represented 54% and 38%, respectively, of a household's average telephone expenditures, while in 2001, these proportions were essentially reversed.¹²⁵

Residential consumer spending on optional service features (including calling features such as voice mail, call display and call waiting) has increased in recent years. In 1999, calling features accounted for approximately 20% of residential local voice services expenditures. In 2004, this proportion increased to 23%.¹²⁶

As displayed in Table 6.2.2, residential consumer expenditures on telecommunications services in 2005 did not change from the previous year. Based on the 2004 and 2005 Decima Surveys, when asked about their telecommunications expenditures, 20% of Canadian households indicated that they spent less than \$50 per month in total on telecommunications services¹²⁷ including local and long distance wireline services, wireless and Internet access services. The percentages of household spending within each of the spending categories displayed in Table 6.2.2 did not differ markedly between larger and smaller communities.¹²⁸

Fifty-two percent of Canadian households spent over \$75 per month on telecommunications services. This would suggest that a large proportion of Canadian households have multiple means of meeting their communication needs. As discussed in section 3.4, 53.9% of households have wireless service and 2.5% of households have only wireless service in 2003. This suggests that 51.4% of households have both wireline and wireless service to meet their local service needs.

¹²³ Statistics Canada 62-555-XPB, Family Expenditure in Canada, 1996; Statistics Canada 56-002-XIE, Quarterly Telecommunications Statistics, 4th quarter 2001.

¹²⁴ Traditional telephone service excludes wireless and Internet services.

¹²⁵ Statistics Canada 62-555-XPB, Family Expenditure in Canada, 1996; Statistics Canada 56-002-XIE, Quarterly Telecommunications Statistics, 4th quarter 2001.

¹²⁶ Source: CRTC Data Collection.

¹²⁷ CRTC 2005 Decima Survey Q.1 asked about total monthly spending on services including local, long distance, cellular and Internet.

¹²⁸ The results were sorted by census metropolitan area (CMA) and non-CMA. CMA refers to an urbanized core having at least 100,000 inhabitants, according to Statistics Canada.

Table 6.2.2
Monthly Household Telecommunications Expenditures
(Percent of Households)

	Less than \$50	\$50-\$75	\$75-\$99	\$99 and Over	Don't Know / Refused to Answer
2004	19%	24%	17%	35%	4%
2005	20%	23%	16%	36%	4%

Source: CRTC 2004 and 2005 Decima Survey

Base: All households

The Connected Consumer

Although the number of local wireline residential subscriptions decreased since 2001 as discussed in section 4.3, the use of other communication methods, such as wireless and Internet access service increased. The percentage of households reporting that they have only wireless access increased from 1.9% in May 2003 to 2.7% in December 2004.¹²⁹ As discussed in section 4.5, the number of wireless subscriptions, both residential and business, surpassed 15 million subscribers in 2004. However, based on Table 6.2.3, the percentage of Canadian households in 2004 and 2005 with at least one subscription to wireless service,¹³⁰ remained relatively unchanged at 68%.

Table 6.2.3
Wireless Subscriptions
(Percent of Households)

	No wireless subscriptions	One wireless subscription	Two wireless subscriptions	Three or more wireless subscriptions
2004	33%	38%	20%	9%
2005	32%	39%	20%	9%

Source: CRTC 2004 and 2005 Decima Survey

Base: All households

With respect to Internet access, approximately 89% of Canadian households can subscribe to high-speed Internet service.¹³¹ In 2004, approximately 5.4 million or 43% of households actually subscribed to high-speed service, and 2.0 million or 16% subscribed to a dial-up service, resulting in over 7.4 million connected households or 59% of all Canadian households.¹³²

¹²⁹ Residential Telephone Service Survey (December 2004).

¹³⁰ CRTC 2005 Decima Survey Q.2.

¹³¹ As discussed in Section 5 - Broadband Availability and Promising Means for Accelerated Broadband Deployment.

¹³² CRTC Data Collection.

Local Service Competition

Although residential consumers have a range of alternative providers for long distance services, Internet access, and wireless telephony, the availability of more than one provider of residential local service is limited to certain centres in Canada, where a small number of competitors offer local wireline service.

In regard to the provision of local telephone service to residential consumers, the Commission has been removing barriers to competition, providing Canadians with flexibility and ease in selecting services and providers and, where necessary, implementing safeguards:

- Local number portability (LNP) was implemented to enable subscribers to switch wireline local service providers without having to change telephone numbers.
- To give consumers, living in multi-dwelling units such as apartments, choice of their local service provider, the Commission, in Decision 2003-45,¹³³ stated that all local telephone companies that want to provide service to customers in multi-dwelling units, should have access to them under reasonable terms and conditions.
- In May 2005, the Commission established a regulatory framework for VoIP services¹³⁴ serving to increase consumer choice for telecommunications services while, at the same time, providing safeguards with respect to local VoIP services¹³⁵ such as local number portability, directory listings and 9-1-1 Emergency Services.
- To inform the public of the availability and terms of local competition,¹³⁶ the Commission issued a guide that provides consumers with information about competition in the residential telephone service market.¹³⁷
- The use of packaging or bundling of services together is increasingly becoming a common marketing tool in promoting telecommunications services to residential consumers. Prior to bundling local service with other services, incumbent telephone companies are required to receive approval from the Commission.¹³⁸

¹³³ *Provision of telecommunications services to customers in multi-dwelling units*, Telecom Decision CRTC 2003-45, 30 June 2003.

¹³⁴ *Regulatory framework for voice communication services using Internet Protocol*, Telecom Decision CRTC 2005-28, 12 May 2005.

¹³⁵ VoIP services are defined as voice communication services using Internet Protocol (IP) that use telephone numbers that conform to the North American Numbering Plan, and that provide universal access to and/or from the Public Switched Telephone Network (PSTN). To the extent that VoIP services provide subscribers with access to and/or from the PSTN along with the ability to make or receive calls that originate and terminate within an exchange or local calling area as defined in the incumbent local exchange carriers' (ILECs') tariffs, they are referred to in this report as local VoIP services.

¹³⁶ *Call-Net Part VII Application - Promotion of local residential competition*, Telecom Decision CRTC 2004-4, 27 January 2004.

¹³⁷ http://www.crtc.gc.ca/eng/INFO_SHT/t1023.htm.

¹³⁸ *Joint marketing and bundling*, Telecom Decision CRTC 98-4, 24 March 1998.

Long Distance Service

Lower rates and aggressive competition among long distance service providers continued in 2004. Pricing alternatives in long distance calling continue to be offered in various forms including a per-minute charge, a flat charge for a fixed number of minutes, or unlimited calling for a flat monthly fee. Long distance services were offered in bundles consisting of competitive services. With vigorous competition, the price per long distance minute has fallen considerably, and has prompted many long distance service providers to introduce a fixed monthly "network" or subscription fee to their long distance plans.

In 2003, residential consumers paid \$3.0 billion for long distance wireline service. By 2004 this declined to \$2.9 billion. As discussed in Section 4.2, residential long distance minutes increased from 22.4 billion minutes in 2003 to 23.0 billion minutes in 2004.

Consumer Protection

The Commission has taken various steps to address consumer protection in a competitive environment:

- In light of the development and use of emergency 9-1-1 service, the Commission noted in Decision 2004-31¹³⁹ that telephone networks were an even more important component of public safety. The Commission determined that consistent with the ILECs' Terms of Service, the ILECS were not permitted to suspend or terminate or threaten to disconnect a customer's tariffed services for failure to make payment for non-tariffed services when that customer has made partial payments sufficient to cover outstanding arrears for tariffed services. In June 2005,¹⁴⁰ the Commission directed the large ILECs to conduct a pilot debt repayment plan for a period of 18 months with a representative sample of former subscribers who have been disconnected because of outstanding debt. The ILECs are to file the results after 12 months of the pilot study and show cause why such a plan should not be permanently instituted by the parties.
- The Commission in Telecom Circular 2005-7 introduced new procedures for disposition of applications for the destandardization and/or withdrawal of tariffed services, recognizing that such applications can have serious effects on individual consumers. The procedures put in place take into account the needs of existing customers. The Commission established a set of criteria which must be met by the applicant. These include the existence of reasonable substitute service, a clear transition plan and an adequate notice to affected customers.¹⁴¹

¹³⁹ *Terms of Service - Disconnection for partial payment of charges*, Telecom Decision CRTC 2004-31, 11 May 2004.

¹⁴⁰ *Bill management tools - Debt repayment plans*, Telecom Decision CRTC 2005-38, 29 June 2005.

¹⁴¹ *New procedures for disposition of applications dealing with the destandardization and/or withdrawal of tariffed services*, Telecom Circular CRTC 2005-7, 30 May 2005.

- Telemarketing is one way that businesses advertise their products and offer their services. Restrictions apply to all telemarketers, although they may differ depending on whether they use a fax or a telephone. To better protect the privacy of consumers from undue inconvenience and nuisance caused by unsolicited telecommunications, the Commission announced changes to its telemarketing rules in Decision 2004-35.¹⁴² Since then, the Commission has approved a stay of these rules pending the disposition of an application to review and vary¹⁴³ of Decision 2004-35. Legislation to establish a national Do Not Call List - Bill C-37 - was subsequently introduced and is currently under review by Parliament.¹⁴⁴

Quality of Service

The Commission established quality of service standards in 1982.¹⁴⁵ The quality of retail service to residential consumers and business customers has been of particular concern to the Commission during the course of changes in the regulatory regime, as well as, changes in the competitive landscape.

In 2002, the Commission stated that because of limited competition in the local service market, competitive pressure alone would not be enough to ensure that ILECs would meet these standards. The Commission implemented, on an interim basis, a plan in the form of payments or rebates to customers when a large ILEC delivers substandard quality of service.¹⁴⁶ In 2005, the Commission finalized¹⁴⁷ the rate adjustment plan whereby residential and business customers of the large ILECs who deliver substandard quality of service would receive credits payable by 30 June of each year.

¹⁴² *Review of telemarketing rules*, Telecom Decision CRTC 2004-35, 21 May 2004 (Decision 2004-35).

¹⁴³ In *Application by the Canadian Marketing Association to stay Decision 2004-35*, Telecom Decision CRTC 2004-63, 28 September 2004, the Commission approved the Canadian Marketing Association's (CMA's) request to stay the new telemarketing rules pending the disposition of the CMA's request to review and vary Decision 2004-35. The stay applied to all requirements set out in Decision 2004-35, except the requirement that telecommunications service providers track and report complaint statistics effective 1 January 2005.

¹⁴⁴ On 13 December 2004, the Minister of Industry announced that the Government was introducing legislation, Bill, C-37, that would amend the *Telecommunications Act* in order to provide the Commission with the ability to establish a national Do Not Call List.

¹⁴⁵ The Commission issued *Final standards for quality of service indicators for use in telephone company regulation and other related matters*, Telecom Decision CRTC 2000-24, 20 January 2000. The Commission also issued *Quality of Service Indicators for Use in Telephone Company Regulation*, Telecom Decision CRTC 97-16, 24 July 1997.

¹⁴⁶ Decision 2002-34.

¹⁴⁷ *Retail quality of service rate adjustment plan and related issues*, Telecom Decision CRTC 2005-17, 24 March 2005.

Wireless Communications

Residential consumers continue to increase their consumption of wireless service. The percentage of Canadian households with wireless service has increased year after year, from 26.2% of households in 1998 to an estimated 53.9% of households in 2003.¹⁴⁸

The industry has developed a variety of rate plans for voice as well as data and Internet access to meet consumer needs. As displayed in Table 6.2.3, it is not unusual for a household to have multiple subscriptions.

In the CRTC 2004 and 2005 Decima Surveys,¹⁴⁹ consumers were asked to indicate their level of interest in being able to retain their wireless telephone number when changing from one wireless service provider to another. As displayed in Table 6.2.4, based on the 2005 Decima Survey, of the 68% of households in Table 6.2.3 that had at least one wireless subscription,¹⁵⁰ 70% stated that it was important that they keep their existing wireless telephone number if they were to change service providers. The percentage of households in support of retaining existing telephone numbers increased over the previous year.¹⁵¹ As was the case in last year's survey, the importance of keeping the telephone number when changing service providers increased with the number of wireless subscriptions a household had.

On 21 April 2005, the wireless industry led by the Canadian Wireless Telecommunications Association (CWTA) announced that the Canadian wireless carriers would implement number portability in Canada. Number portability will enable Canada's wireless customers to keep the same phone number when changing service providers (either wireless or wireline). The CWTA published a proposed implementation plan on 12 September 2005.

Table 6.2.4
Importance of Keeping Existing Wireless Telephone Number When Changing Suppliers

Households with:	One wireless subscription		Two wireless subscriptions		Three or more wireless subscriptions		All households with at least one wireless subscription	
	2004	2005	2004	2005	2004	2005	2004	2005
Important	61%	65%	70%	76%	74%	80%	65%	70%
Not Important	36%	32%	28%	24%	24%	18%	32%	28%
Don't know/ did not answer	4%	3%	1%	1%	2%	1%	3%	2%

Source: CRTC 2004 and 2005 Decima Surveys

Base: Households with at least one wireless subscription

¹⁴⁸ This is based on monitoring reports submitted by the ILECs pursuant to Order CRTC 2000-393, 10 May 2000. The June 2005 report was filed with the Commission on 30 June 2005.

¹⁴⁹ CRTC 2005 Decima Survey Q2a.

¹⁵⁰ In the Survey, there were 1,376 households with at least one wireless subscription. This sample provides an overall margin of error within +/-3%, 19 times out of 20.

¹⁵¹ In the CRTC 2005 Decima Survey Q3a, 65% of households with at least one wireless subscription stated that it was important that they keep their existing wireless telephone number if they were to change suppliers.

In the CRTC 2005 Decima Survey, all households were asked to compare wireless service to wireline service and to indicate whether they would consider replacing their wireline with wireless service.¹⁵² As displayed in Table 6.2.5, in 2005, 55% of all households rated wireless service as good as, or better than wireline service, compared to 48% in 2004. Sixty-two percent of the households surveyed in 2005 that had at least one wireless subscription rated wireless service as good as or better than wireline service, compared to 54% in 2004. Although the consumers' rating of wireless service as being as good as or better than wireline service increased from 48% in 2004 to 55% in 2005, consumers remained decidedly unchanged when asked if their wireless service would replace wireline service. In 2005, 83% of the households indicated that they would not consider replacing their wireline service with wireless, compared to 82% in 2004.

The households, with and without wireless subscriptions, that answered yes to being prepared to consider replacing their wireline service with wireless service (15% of all households), were asked to pick among a list of factors the two most important ones to consider if they were to make such a move.¹⁵³ Consistent with the results of the previous year, the factors most often cited, were: (1) the cost of wireless service, followed by (2) quality/reliability, and (3) keeping the same telephone number.

¹⁵² CRTC 2005 Decima Survey, Q4.

¹⁵³ CRTC 2005 Decima Survey Q4a.

Table 6.2.5
Comparison of Wireline and Wireless Service

Compare wireless service to wireline service - which is better?												
Number of Wireless Phones in Household:	No wireless subscriptions		Households with wireless subscriptions								All Households	
			One or more		One only		Two only		Three or more			
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
Wireless is better	9%	9%	11%	13%	10%	8%	10%	12%	18%	19%	10%	10%
Wireless is as good	29%	33%	43%	49%	43%	52%	45%	49%	37%	45%	38%	45%
Wireless is not as good	29%	31%	40%	34%	38%	35%	43%	34%	44%	34%	36%	33%
Don't know/ did not answer	34%	28%	6%	4%	9%	5%	3%	5%	2%	2%	15%	12%
Consider replacing wireline service for exclusive use of wireless service												
Number of Wireless Phones in Household:	No wireless subscriptions		Households with wireless subscriptions								All households	
			One or more		One only		Two only		Three or more			
	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
Yes - would consider replacing	12%	12%	17%	19%	15%	13%	17%	17%	28%	28%	15%	15%
No - would not consider replacing	84%	86%	80%	78%	83%	85%	80%	80%	69%	68%	82%	83%
Don't have traditional phone service/ don't know/ did not answer	4%	2%	3%	2%	2%	1%	3%	3%	3%	2%	3%	2%

Source: CRTC 2004 and 2005 Decima Surveys

Base: All households

Access to the Internet

Internet service providers (ISPs) offer a range of Internet services that include dial-up, DSL, cable modem, and wireless access services, with a variety of customer plans ranging from hourly charges to a flat monthly fee for a certain number of hours or unlimited access. In 2003, Statistics Canada identified 256 ISPs providing Internet services.¹⁵⁴ This group consists of incumbent telephone companies, cable companies and a large number of small entities that resell Internet service. In 2004, about 7 million of 12.3 million Canadian households accessed the Internet from home, representing a gain of 7% over the previous year.

¹⁵⁴ Statistics Canada; "Struggling to remain competitive: a study of factors impeding growth for Canadian Internet service providers", p.2; Heather Archibald; Catalogue No. 63F0002XIE No. 44, July 2003.

In 1998, the Commission required cable companies to open their networks to ISPs,¹⁵⁵ and in 2003,¹⁵⁶ ruled on wholesale prices charged by the cable companies to ISPs. As stated in section 5 of this report, broadband service in 2004 was available to 95% of households in urban centres and 63% of households in rural areas.

Pricing for high-speed Internet service has reached the point where it is comparable to low-speed service for users requiring a lot of connect time.¹⁵⁷ Although dial-up can be generally obtained for approximately \$10/month, depending on the plan, plus an additional charge for excess connect time, dial-up Internet subscriptions continue to decline in favour of high-speed service which is priced from approximately \$35/month.

In Decision 2003-49,¹⁵⁸ the Commission mandated that high-speed DSL access service be provided by Aliant Telecom, Bell Canada, MTS, SaskTel and TCI to residential customers who subscribe to local wireline services of a CLEC provided via the ILEC's local loops. As a result, consumers who switch their local service from an ILEC to a CLEC need not give up their subscription to an ILEC's high-speed service.

Consumer Awareness

In a competitive market, consumers have choices. Their choices in telecommunications services include, not only selection of the service that best meets their needs, but also encompasses choice of supplier. In making these decisions, consumers assess, among other things, the features, prices, benefits and quality of the services offered, and the customer support provided.

In the CRTC 2005 Decima Survey, consumers were asked how easy it was to compare the prices and features offered by companies in local and long distance wireline services, wireless and Internet access services.¹⁵⁹ The results of the surveys for the last three years are shown in Table 6.2.6.¹⁶⁰

¹⁵⁵ *Regulation under the Telecommunications Act of certain telecommunications services offered by "Broadcast Carriers"* Telecom Decision CRTC 98-9, 9 July 1998. See also *Application concerning access by Internet service providers to incumbent cable carriers' telecommunications facilities*, Telecom Decision CRTC 99-11, 14 September 1999.

¹⁵⁶ *IMCAIP's request for mandatory resale of retail Lite Internet service* Telecom Decision CRTC 2003-47, 14 July 2003.

¹⁵⁷ Merrill-Lynch Broadband Handbook, 21 February, 2003, p. 17.

¹⁵⁸ *Call-Net Enterprises Inc. - Request to lift restrictions on the provision of retail digital subscriber line Internet services*, Telecom Decision CRTC 2003-49, 21 July 2003.

¹⁵⁹ CRTC 2005 Decima Survey, Q8.

¹⁶⁰ Ipsos-Reid Survey, 2003, Q4 - based on 1,055 respondents.

Table 6.2.6
Consumers' Ability to Compare Service Offerings

	Local Service			Long Distance Service			Cellular Service			Internet Service		
	2003	2004	2005	2003	2004	2005	2003	2004	2005	2003	2004	2005
Easy to compare	58%	61%	63%	68%	54%	53%	55%	47%	44%	65%	55%	52%
Not easy to compare	36%	30%	23%	30%	39%	34%	33%	36%	36%	33%	25%	24%
Don't know/ did not answer or service does not apply	6%	9%	14%	3%	7%	13%	12%	16%	20%	12%	20%	24%

Source: CRTC 2004 and 2005 Decima Survey and CRTC 2003 Ipsos-Reid Survey
Base: All households

Respondents were asked if they had ever subscribed to a company other than their traditional telephone company for long distance services.¹⁶¹ As displayed in Table 6.2.7, there is a slight increase in 2005 in the number of households who at one time subscribed to long distance service from an alternative provider, compared to 2004.

Table 6.2.7
Consumers' Ever Subscribing to Alternate Company Long Distance Services

	Long Distance Service		
	Yes	No	Don't know
2004	41%	58%	1%
2005	42%	55%	2%

Source: CRTC 2004 and 2005 Decima Survey
Base: All households

Overall, 64%¹⁶² of respondents stated they had benefited from the availability of competition in telecommunications services compared to 67%¹⁶³ from the previous year.

Regulatory Developments Affecting Consumer Services

The Commission attaches high importance to the advancement of consumer interests and consumer access to telecommunications services in the context of the continued transition from a monopoly to a competitive telecommunications market. The Commission monitors and implements certain regulatory measures to ensure that basic telephone service provided by the ILECs continues to meet the changing needs of consumers:

¹⁶¹ CRTC 2005 Decima Survey, Q10 a,b; CRTC 2004 Decima Survey, Q10a,b.

¹⁶² CRTC 2005 Decima Survey, Q11 c.

¹⁶³ CRTC 2004 Decima Survey, Q6c.

- In light of the benefits of itemized billing, the large ILECs are now providing all customers with monthly itemized billing statements.^{164, 165}
- Although demand for pay telephone service was declining, the Commission, in Decision 2004-47,¹⁶⁶ concluded that pay telephone service is still an important public service that wireless service has not rendered obsolete. The Commission considered that access to pay telephone service was particularly crucial in rural and remote communities where consumers may not have access to basic residential service and where telecommunications service providers may not offer wireless services. The Commission therefore established a notification process for ILECs when the last pay telephone in a community is scheduled for removal. The Commission also directed the ILECs to implement a teletypewriter upgrade program for certain pay telephones, to provide access to pay phones by deaf consumers.
- Three-digit dialing (N-1-1) such as 411, 711 and 9-1-1 is used to provide public access to specific services. In Decision 2001-475,¹⁶⁷ the Commission, among other things, established guidelines to be used to determine the type of services that may be assigned to unused 3-digit codes. The Commission determined that in view of the scarcity of N-1-1 numbers, provision of N-1-1 services must be based on a compelling need to serve the broad public interest that cannot be satisfied through other dialing arrangements. The following N-1-1 codes have been assigned for public access to designated services:
 - 2-1-1 for access to community social services;¹⁶⁸
 - 3-1-1 for access to non-emergency municipal government services;¹⁶⁹
 - 4-1-1 for access to Directory Assistance;
 - 6-1-1 for access to service providers' network repair service;
 - 7-1-1 for access to Message Relay Service (MRS) by the deaf;
 - 8-1-1 for access to non-urgent health care telephone triage services;¹⁷⁰
 - 9-1-1 for access to emergency services.

¹⁶⁴ *Bell Canada and Aliant Telecom Inc. - Show Cause on the issuance of monthly itemized billing statements - Follow-up to Decision 2002-34*, Telecom Decision CRTC 2003-86, 23 December 2003.

¹⁶⁵ *Télébec and TELUS Québec - Show Cause on the issuance of monthly itemized billing statements - follow-up to Decision 2002-43*, Telecom Decision CRTC 2004-67, 8 October 2004.

¹⁶⁶ *Access to pay telephone service*, Telecom Decision CRTC 2004-47, 15 July 2004.

¹⁶⁷ *Allocation of three-digit dialing for public information and referral services*, Decision CRTC 2001-475, 9 August 2001 (Decision 2001-475).

¹⁶⁸ *Ibid.*

¹⁶⁹ *Assignment of 311 for non-emergency municipal government services*, Telecom Decision CRTC 2004-71, 5 November 2004.

¹⁷⁰ *Alberta Health and Wellness' request for code 8-1-1 for non-urgent health teletriage services*, Telecom Decision CRTC 2005-39, 6 July 2005.

6.3 Business Customers

In 2004, roughly 91% of business wireline accounts were small business accounts, a decrease from the 95% in 2003. However, the revenues¹⁷¹ generated by these accounts represented approximately 16% of total business wireline revenues. Table 6.3.1 summarizes the 2004 distribution of small, medium, large and very large business accounts and revenues for incumbents, competitors (ILEC out-of-territory) and competitors (other).¹⁷²

**Table 6.3.1
Business Accounts and Revenues Distribution (2004)**

	Business Accounts				Business Revenues			
	Small	Medium	Large	Very Large	Small	Medium	Large	Very Large
Incumbents	91.3%	6.9%	1.5%	0.3%	16.8%	15.4%	14.5%	53.3%
Competitors (ILEC out-of-territory)	89.1%	8.3%	1.9%	0.7%	10.6%	10.2%	15.6%	63.6%
Competitors (other)	93.4%	2.9%	3.6%	0.1%	22.8%	16.5%	24.0%	36.7%
Industry	91.4%	6.5%	1.8%	0.3%	16.4%	14.7%	15.4%	53.6%

Source: CRTC Data Collection

During the 1999 to 2004 period, the number of large and very large business accounts combined, as a percentage of total business accounts, remained relatively constant in a roughly 1% to 4%¹⁷³ range for these 3 groups of service providers. However, the combined revenues over the period represented 79% of the total business revenues for the competitors (ILEC out-of-territory) and 61% for the competitors (other). In 2004, the number of large business accounts was approximately 6 times the number of very large accounts. However, in terms of revenues, the very large business revenues were approximately 3.5 times the large business revenues.

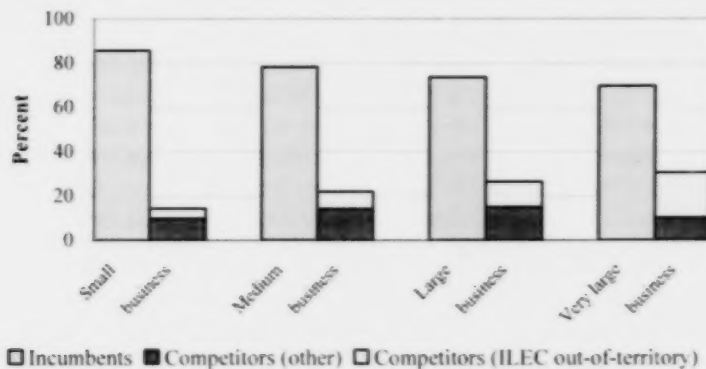
Figure 6.3.1 compares the total incumbent, competitor (out-of-territory) and competitor (other) local, long distance, and data and private line revenues for the small, medium, large and very large business market segments in 2004. Incumbents had the lion's share of these market segments, with approximately 70%, or more, of each of the business market segment revenues. Except for the very large business segment where the competitors (ILEC out-of-territory) had approximately 20% of the business revenues, the competitors (other) had the majority portion of the total competitor share in each of the remaining market segments.

¹⁷¹ Revenues include wireline revenues from local and access, long distance and data & private line services.

¹⁷² For the purposes of this report, wireline business customers were segmented into small, medium, large and very large customers. A small business customer is defined as a business account that generated less than \$6,000 in annual telecommunications revenues. A medium business customer is defined as a business account that generated annual revenues of at least \$6,000 but less than \$30,000. A large business customer is defined as a business account that generated annual revenues of at least \$30,000 but less than \$240,000. A very large business account is defined as a business account that generated annual revenues of at least \$240,000.

¹⁷³ Source: CRTC Data Collection.

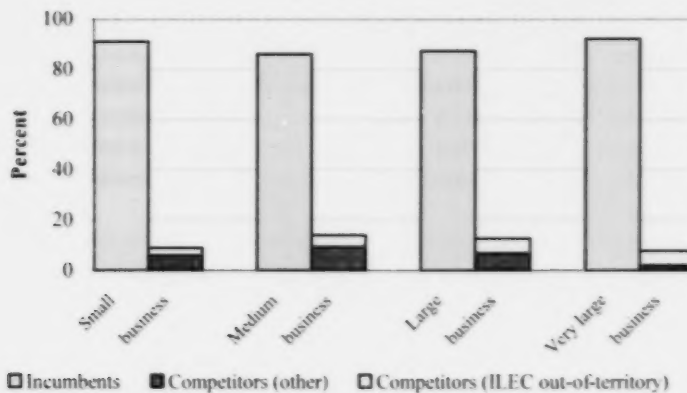
Figure 6.3.1
Total Revenue¹⁷⁴ Distribution
Incumbents, Competitors (Out-of-Territory) and Competitors (Other)
2004



Source: CRTC Data Collection

Figure 6.3.2 compares the local service revenues of incumbents, competitors (out-of-territory) and competitors (other) from the small, medium, large and very large business market segments in 2004. The incumbents were the dominant suppliers of local service to all the business customers.

Figure 6.3.2
Local Service Revenue Distribution
Incumbents, Competitors (Out-of-Territory) and Competitors (Other)
2004

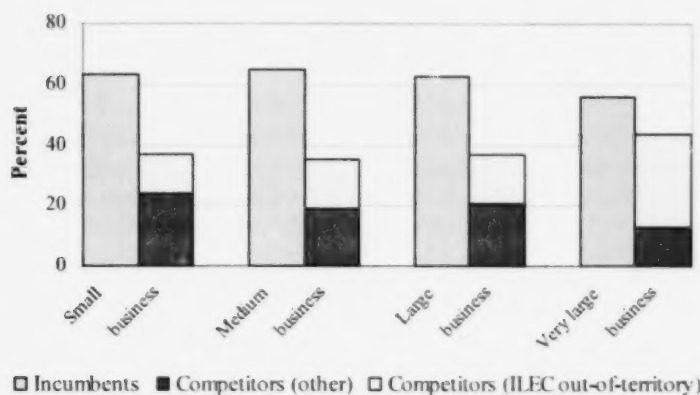


Source: CRTC Data Collection

¹⁷⁴ Revenues include wireline revenues from local and access, long distance and data & private line services.

The competitors (other) had approximately 20% of the long distance market for the small, medium and large business customers, as displayed in Figure 6.3.3. The competitors (ILEC out-of-territory) had approximately 15% of the long distance market for the small, medium and large business customers and over 30% of the very large business market. In all cases, the incumbents had over 55% of the long distance revenues in each of these segments.

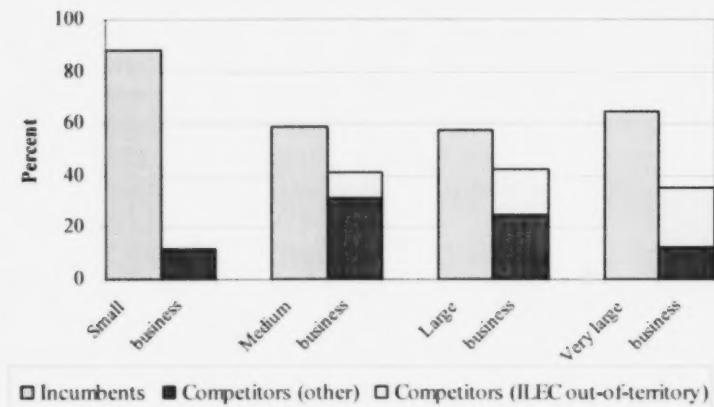
Figure 6.3.3
Long Distance Service Revenue Distribution
Incumbents, Competitors (Out-of-Territory) and Competitors (Other)
2004



Source: CRTC Data Collection

With respect to data and private line service revenues, competitors (other) had approximately 25% to 30% of the medium and large business market and a smaller percentage of the small and very large market. Competitors (ILEC out-of-territory) had approximately 10% of the medium market and increasing amounts of the large and very large markets.

Figure 6.3.4
Data and Private Line Service Revenue Distribution
Incumbents, Competitors (Out-of-Territory) and Competitors (Other)
2004



Source: CRTC Data Collection

**Summary of Canadian Telecommunications
Milestones to Competition**

Market	Year	Details
Data and Private Line	1979	The interconnection of private line data circuits between CNCP Telecommunications and Bell Canada was permitted.
Terminal Equipment	1982	Customers were permitted to purchase their own terminal equipment (e.g., telephone sets).
Wireless	1984	A duopoly market structure was initially created in 1984; two additional national mobile wireless licences were issued by Industry Canada in 1995. The terms and conditions for wireless service providers to interconnect to the incumbent telephone companies' networks were initially established in 1984.
Long Distance (resale)	1987	Long distance resale was first permitted in 1987, with the rules being liberalized in 1990. Resale of international long distance service was permitted in 1991.
Long Distance (facilities-based)	1992	Facilities-based competition was permitted in 1992, but full competition did not begin until 1994 when the incumbent telephone companies were required to modify their networks to allow customers to make long distance calls without dialling extra digits (equal ease of access). Facilities-based competition in the provision of international services was permitted in 1998.
Local	1997	The regulatory framework for facilities-based competition in the local services market was established for most large incumbent telephone companies in 1997. In the following year, these large incumbents were required to begin to modify their networks to allow customers to switch service providers without changing telephone numbers (i.e., implement local number portability).
Pay Telephone	1998	Incumbent telephone companies were required to put in place access tariffs and service agreements for new entrants.
Local VoIP Services	2005	A regulatory framework for voice communication services using Internet Protocol (VoIP) was established. The Commission determined that local VoIP services should be regulated as local exchange services.

**Summary of Canadian Telecommunications
Markets Subject to CRTC Forbearance Rulings**

Market	Year	Details
Terminal Equipment	1994	Sale and rental of terminal equipment.
Wireless	1994	Cellular, personal communications services, mobile radio and paging, except in the case of incumbent in-house mobile service providers. Forbearance extended to incumbent mobile operations, starting in 1998, once competitive safeguards had been implemented.
Satellite Services	1994	Telesat's digital video compression services initially; further services offered by Telesat, such as sale/lease of earth stations and RF channels, in subsequent years.
Services Provided by Non-dominant Carriers	1995	Services, such as long distance, data, Internet and private line, provided by non-dominant competitive carriers.
Data and Private Line	1997	High-speed/DDS interexchange private line services provided by the incumbent telephone companies on a route-specific basis.
Internet Services	1997	Incumbent telephone companies' retail Internet services in 1997 and those of cable providers in 1998.
Long Distance	1998	Toll and toll-free services.
International Services	1998	Initially excluded Teleglobe; however, certain international services provided by Teleglobe later forborne as well.
Data and Private Line	2004	With some conditions, additional high capacity digital data interexchange private line services forborne from regulation on routes for which competitors of several incumbent local exchange carriers now offer, or provide, services at DS-3 or greater bandwidth.

**Summary of Certain Recent CRTC Rulings
Relevant to Telecommunications Competition¹**

Ruling	Details
<i>Call-Net Part VII Application - Promotion of local residential competition</i> , Telecom Decision CRTC 2004-4, 27 January 2004.	The Commission granted, with modifications, Call-Net's request for an education program to inform the public of the availability and terms of local competition, and Call-Net's request for an extension from three months to 12 months of the no-contact restriction under the winback rules.
<i>FCI Broadband - Request to lift restrictions on the provision of retail digital subscriber line Internet services to business customers</i> , Telecom Decision CRTC 2004-34, 21 May 2004.	The Commission directed Bell Canada, Aliant Telecom, SaskTel and TCI, to provide upon request, their respective retail digital subscriber line Internet service to any business CLEC primary exchange service customer who is being served by a local loop leased from any of them and who would otherwise qualify for the service.
<i>Point of interconnection and service charge rates, terms and conditions for third party Internet access using cable networks</i> , Telecom Decision CRTC 2004-69, 2 November 2004.	The Commission approved tariffs and agreements setting out the rates, terms and conditions for third party Internet access to allow Internet service providers to connect with and serve customers over the cable networks of the major cable companies, namely, Cogeco Cable Canada inc., Rogers Communications Inc., Shaw Communications Inc., and Vidéotron ltée.
<i>Competitor Digital Network Services</i> , Telecom Decision CRTC 2005-6, 3 February 2005.	The Commission determined that the ILECs provide to competitors DNA access and links, DNA intra-exchange, central office (CO) channelization, non-forborne metropolitan IX, copper and optical co-location links and other CO connecting links. The Commission established the appropriate pricing treatment for each service, the rates, terms and conditions applicable to CDN services, and compensation to the ILECs for their provision of CDN services to competitors.

¹ See previous GIC monitory reports for a summary of earlier rulings.

Ruling	Details
<i>Emergency service obligations for local VoIP service providers</i>, Telecom Decision CRTC 2005-21, 4 April 2005.	The Commission directed Canadian carriers, offering fixed (non-nomadic) local VoIP service, where the end-user is assigned an NPA-NXX native to any of the local telephone exchanges within the region covered by the customer's serving Public Safety Answering Point (PSAP), to provide 9-1-1/E9-1-1 service, where it is available from the ILEC. With respect to voice services offered on a nomadic basis, or with a telephone number that is not native to any of the telephone exchanges within a customer's PSAP serving area, the Commission directed Canadian carriers offering these local VoIP service configurations to implement, on an interim basis, a level of service functionally comparable to basic 9-1-1. In light of the public safety issues related to the limitations on 9-1-1/E9-1-1 service provided with local VoIP services, the Commission directed Canadian carriers to notify customers regarding any limitations, before service commencement and during service provision and to obtain from their customers express consent to such limitations.
<i>Promotions of local wireline services</i>, Telecom Decision CRTC 2005-25, 27 April 2005.	The Commission permitted ILEC promotions in the local wireline market, subject to a number of competitive safeguards.
<i>Review of price floor safeguards for retail tariffed services and related issues</i>, Telecom Decision CRTC 2005-27, 29 April 2005.	The Commission modified the imputation test for certain stand-alone competitor services, general tariff bundles, and pricing rules for term and volume contracts.

Glossary of Terms and Acronyms¹

Analog service: Transmission of a set of audible frequencies enabling telephony voice conversations or dial-up Internet access via a regular telephone line. Virtually all residential telephones are analog devices. Analog signals are typically converted to a digital format.

Broadband services: For the purposes of this report, a service enabling the two-way transmission of voice, data or multimedia communications with speeds in one direction in excess of 1.544 Mbps.

Cable Internet service: A bi-directional high-speed digital communication service, enabling Internet access through the use of cable TV coaxial network.

Competitor Digital Network (CDN) Service: A Commission mandated service where certain CDN service components are provided to competitors at mandated wholesale rates. In addition, the service may not be utilised for simple resale.

Centrex resale: The purchase and resale of bulk Centrex service to retail customers.

Centrex service: A telephone company-supplied local service with associated sets of calling features (e.g., call display, call forwarding).

Competitive local exchange carrier (CLEC): A facilities-based provider of local exchange service, other than an ILEC.

CRTC Interconnection Steering Committee (CISC): A forum for parties, with Commission assistance, to resolve local competition implementation issues of a technological, operational or administrative nature and to resolve other telecommunications issues.

Digital network access (DNA) service: A tariffed service of the ILECs that provides for the digital transmission of information from the customer's premises to another premises or a network service within the local telephone exchange.

Digital service: The transmission of binary data signals (a continuous string of zeros and ones). Such service is used for computer-to-computer communications or for transmission of digitally-encoded analog signals in telephone and digital cellular networks.

Digital subscriber loop (DSL): A local copper loop equipped to allow high-speed data transmission.

¹ A complete glossary of telecommunications terms can be found at <http://www.crtc.gc.ca/dcs/eng/glossary.htm>.

Facilities-based carrier: A carrier that owns and operates transmission facilities to provide telecommunications services

Fibre optics: A broadband transmission facility which uses a beam of light to transmit a digital signal through a glass strand.

Fixed wireless: Point-to-point transmission through the air between stationary devices.

Incumbent local exchange carrier (ILEC): A company that, prior to the introduction of competition, provided monopoly local telephone service.

Internet service provider (ISP): A company that provide customers with Internet access.

Interexchange private line (IXPL): A dedicated communications channel provided at flat rates between points in different exchanges.

Local loop: Sometimes called the "last mile", the connection between the customer premise and the central office.

Long distance resale: The purchase and resale of bulk private line and other interexchange services for the provision of long distance services to retail customers.

Mobile service: Wireless service which includes analog and digital cellular (e.g. Personal Communications Services or PCS), but excludes fixed wireless service.

Narrowband service: For the purpose of this report, a service enabling the two-way transmission of voice or data communications with speeds in either direction not exceeding 64 Kbps.

Private line service: A dedicated communications channel between two or more points.

Support structure: Structures, such as poles and conduit, that support transmission facilities (copper, cable and/or fibre optics).

Terminal equipment: Equipment located at the customer's premises, used for voice or data communications (e.g., telephone set).

Voice over Internet Protocol (VoIP): A service or capability utilizing both hardware and software that employs IP networks, such as the Internet, as the transmission medium for voice communication.

VoIP services: Voice communication services using Internet Protocol (IP) that use telephone numbers that conform to the North American Numbering Plan, and that provide universal access to and/or from the public switched telephone network (PSTN). VoIP services that provide subscribers with access to and/or from the PSTN, along with the ability to make or receive calls that originate and terminate within an exchange or local calling area as defined in the ILECs' tariffs, are referred to in this report as local VoIP services.

Wireless service: A telecommunications service via the airwaves using radio, cellular, satellite, microwave and other wireless transmission systems, including fixed wireless.

Wireline service: Telecommunications service offered over wires.

